



Houghton Chemical Corporation

52 Cambridge Street
P.O. Box 307
Allston (Boston), Massachusetts 02134
Tel (617) 254-1010 Fax (617) 254-2713

RECEIVED
12/23/02



HOUGHTON

December 19, 2002

Janet Conetta
Strategic Integration Manager
Emergency and Remedial Response Division
U.S. Environmental Protection Agency, Region 2
290 Broadway
New York, NY 10007-1866

**Re: Request for Information Relating to Berry's Creek Study Area,
Bergen County, NJ Addressed to Houghton Chemical Corporation**

Dear Ms. Conetta:

Enclosed is the information you requested. Please note that we have attached as an Addendum the most recent Supplemental Remedial Investigation Report for Soils and Groundwater and the Supplement to Remedial Action Workplan under ISRA Case No. E98274. This constitutes the most recent submission to the New Jersey Department of Environmental Protection.

As indicated by the enclosed Supplemental Remedial Investigation Report, the data gathered to date "indicate that groundwater contamination is not migrating off-Site" (see Section 6.1 on page 7). This is likely attributable to the natural biodegradation processes occurring on the Site at 30 Amor Avenue Carlstadt which have been documented during the remedial investigation.

Based upon this information, it would appear that none of the contaminants are migrating any distance or contributing in any way to the contamination discovered in Berry's Creek.

If we can provide additional information or further help, please let us know.

Sincerely,

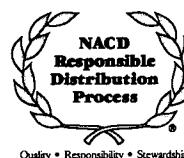
HOUGHTON CHEMICAL CORPORATION

Bruce E. Houghton
Bruce E. Houghton
President

2001 Business of the Year – Greater Boston Chamber of Commerce

Distributors of Solvents and Chemicals.
Manufacturers of Automotive Chemicals
and Heat Transfer Fluids.
E:\Work\BH1219.2.DOC

Founded in 1927 by Philip A. Houghton



Quality • Responsibility • Stewardship

Houghton Chemical Corporation

52 Cambridge Street
P.O. Box 307
Allston (Boston), Massachusetts 02134
Tel (617) 254-1010 Fax (617) 254-2713



HOUGHTON

December 19, 2002

**Seth Ausubel
Remedial Project Manager
United States Environmental Protection Agency
Region II
Emergency and Remedial Response Division
290 Broadway, 19th Floor
New York, NY 10007-1866**

RE: Request for information pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Section 9601 et seq., re: the Berry's Creek Study Area, Bergen County, New Jersey

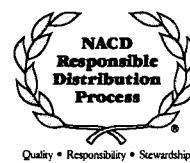
- Item 1.a. Houghton Chemical Corporation (also referred to as "the Company")
52 Cambridge Street
P.O. Box 307
Boston (Allston), MA 02134

Item 1.b. The Company is organized in the Commonwealth of Massachusetts.

Item 1.c. Proctor W. Houghton . Chairman of the Board
152 Chestnut Street
West Newton, MA 02165

Bruce E. Houghton President/Chief Executive Officer
107 Lakeview Avenue
Cambridge, MA 02134

Item 1.d. Houghton Chemical Corporation is a wholly-owned subsidiary of the Houghton Chemical Trust, a Massachusetts business trust having transferable shares. Houghton Chemical Corporation is not a subsidiary or affiliate of any other company, nor does it have separately incorporated subsidiaries.



- Item 1.e. Houghton Chemical Corporation was incorporated in 1927 in the Commonwealth of Massachusetts.
- Item 1.f. The Company is neither a successor to, nor has been succeeded by, any other entity.
- Item 2. The Site is at 30 Amor Avenue, Carlstadt, NJ, Block 123, Lot 128. It is approximately 1.4 acres in area.
- Item 3. Houghton Chemical Corporation's business is the distribution and blending of organic chemicals. The Company purchases commodity organic chemicals from national and international sources, and then markets and sells those products either in the same form in which they were received or in a combined blended form to industrial consumers throughout the northeast United States. The nature of Houghton Chemical Corporation's business has not changed since its acquisition of certain assets of Elco Solvents Corporation.
- Item 4. Houghton Chemical Corporation purchased certain assets of Elco Solvents Corporation on December 9, 1998, and it has owned and operated the Site since that date. Houghton Chemical Corporation had no previous ownership or other interest in the Site prior to that date.
- Item 5. The Site has not substantially changed since Houghton Chemical Corporation's acquisition of it from Elco Solvents Corporation on December 9, 1998.
- Item 6. Elco Solvents Corporation was the owner and operator of the Site prior to December 9, 1998. Up until that date (December 9, 1998), when Houghton Chemical Corporation acquired certain assets of Elco Solvents Corporation, Elco Solvents Corporation had been a customer of Houghton Chemical Corporation. Houghton Chemical Corporation assumed responsibility for remediation of the site but did not assume any other liability for contamination which may have occurred offsite.

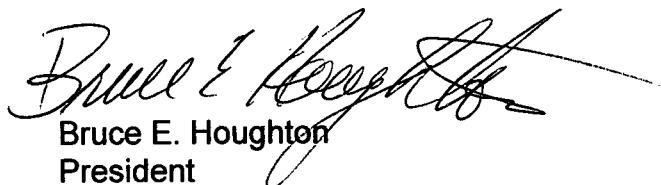
- Item 7.a. Since its purchase of certain of the assets of Elco Solvents Corporation on December 9, 1998, Houghton Chemical Corporation has conducted its business of packaging, blending and distributing organic liquid solvents at the Site.
- Item 7.b. See attached Addendum A. (Please note that the computer printout shows the same chemical item in different containers or packages.)
- Item 7.c. There are no research and development activities conducted at the Site.
- Item 7.d. December 9, 1998 until present.
- Item 8. Houghton Chemical Corporation has not ceased operations at the Site since its acquisition on December 9, 1998.
- Item 9. Houghton Chemical Corporation does generate hazardous waste at the Site which is either duly disposed of through Northeast Environmental and transported by Freehold Cartage or duly disposed of and transported by Marisol. (See Addendum D)
- Item 10. See Addendum B for Houghton Chemical Corporation's permits which are applicable to the Site.
- Item 11. See attached Addendum A for a list of hazardous substances which are or have been stored and/or handled at the Site since Houghton Chemical Corporation acquired it on December 9, 1998.
- Item 12. The Site consists of a tank farm of 12 tanks and 1 cinder block building composed primarily of a warehouse, with additional areas for product packaging and offices. See attached Addendum B for a list of the materials stored in the tank farm. All other materials are packaged and stored in the 13,000 square foot warehouse area. A Site map is included in Addendum C.

- Item 13. No hazardous wastes or industrial wastes are treated or disposed of on site. All hazardous wastes generated are taken off site for treatment and disposal. (See also the response to Item 9 above). All hazardous wastes that are generated are either surplus inventory or the residual material from the flushing of lines associated loading and unloading tank trucks. The names and addresses of the transporters and disposal facilities are set forth in Addendum D.
- Item 14. The corporate officer who decides which contractor(s) are to be hired to transport and dispose of the hazardous waste generated at the Site is Bruce E. Houghton, 107 Lakeview Avenue, Cambridge, MA 02134, acting in his capacity as President of the Company.
- Item 15. See attached Addendum C for a copy of the Company's most recent submission to the State of New Jersey regarding remedial activities at the Site. The Company is undertaking these remedial activities consistent with applicable law.
- Items 16.a.
and b. All spills, leaks or releases into the environment of any hazardous substances, pollutants or contaminants occurred before Houghton Chemical Corporation acquired certain of the current assets of Elco Chemical Corporation, including ownership of the Site. Other than permitted air emissions, there have been no spills, leaks or releases to the environment during the period of Houghton Chemical Corporation's ownership of the Site. Houghton Chemical Corporation has no knowledge of how or when the spills, leaks or releases occurred apart from that which can be logically inferred from the remedial investigation activities conducted at the Site (see Item 16.d. below).
- Item 16.c. Given the circumstances described in Items 16.a. and b. above, Houghton Chemical Corporation does not know the amount of each substance, pollutant or contaminant that was released.

- Item 16.d. The historic releases appear, based upon soil and groundwater testing, to have occurred primarily in the tank farm area to the northeast of the building and also at the northeasterly end of the truck loading/unloading pad adjacent to the easterly side of the tank farm area. Additionally, there was a minor release where an underground #2 fuel oil tank was sited on the northwest side of the building. This fuel oil tank has since been removed, and the New Jersey Department of Environmental Protection ("NJ DEP") has determined that no further action is required with respect to the release from it.
- Item 16.e. Based upon the remedial investigations conducted to date, it does not appear that there has been any significant release migration from the Site so as to impact Berry's Creek and its associated water bodies or wetlands.
- Item 16.f. See attached Addendum D for the most recent remedial investigation report, dated August 7, 2002, relating to the Site. As discussed in this report, it appears that the historic on-Site releases are biodegrading naturally prior to leaving the Site.
- Item 17. Based upon the remedial investigations conducted at on the Site, the required form has been filled out (see Page 5 attached). As noted in Items 16.e. and f. above, it appears that the releases of hazardous substances, pollutants or contaminants have not significantly migrated from the Site so as to impact Berry's Creek and its associated water bodies and wetlands. However, since the definition of the Berry's Creek Study Area appears broad enough to include the Site within it, we have nevertheless filled in the form.
- Item 18.a. The Company does not receive industrial waste from any companies, firms, facilities or individuals.
- Item 18.b. Not applicable
- Item 18.c. Not applicable
- Item 18.d. Not applicable
- Item 18.e. Not applicable
- Item 19. Not applicable

- Item 20. As noted, the Company does not receive industrial waste from any companies, firms, facilities or individuals.
- Item 21. The person who assisted in completing this response is:
Ronald McGilvray, Houghton Chemical Corporation, Information Technology
- Item 22. Documents consulted, examined or referred to in preparation of these answers include the materials submitted as Addenda to this response, the permits described in Item 10 above and the remedial investigation reports submitted to the NJ DEP. A copy of the most recent remedial investigation report is attached as Addendum C.

Sincerely,
HOUGHTON CHEMICAL CORPORATION



Bruce E. Houghton
President

Request for Information Regarding Chemical Releases to the Berry's Creek Study Area

* * *

Instructions: As instructed in Question 17, please complete this form by marking the appropriate spaces. Indicate whether each of the chemicals listed has ever been released from the Site to the Berry's Creek Study Area, including creeks, ditches, or other water bodies, or wetlands. Follow additional instructions below. Return the completed form along with your other responses to the Request for Information in the Matter of the Berry's Creek Study Area, Bergen County, New Jersey. N/A signifies no information available.

	Yes	No	N/A
acenaphthene	✓		
acenaphthylene	✓		
anthracene	✓	✓	
aluminum		✓	
antimony		✓	
arsenic		✓	
benz(a)anthracene	✓		
benzene	✓		
benzo(a)pyrene	✓		
benzo(b)fluoranthene	✓		
benzo(g,h,i)perylene	✓		
benzo(k)fluoranthene	✓		
bis(2-ethylhexyl)phthalate	✓		
butyl benzyl phthalate	✓		
cadmium		✓	
chlorinated dibenzo-p-dioxins (if "yes", please list specific dioxin compounds on a separate sheet)		✓	
chlorinated dibenzofurans (if "yes", please list specific compounds on a separate sheet)		✓	
chlorobenzene	✓		
chloroform	✓		
chromium	✓	✓	
chrysene	✓		
copper		✓	
cyanide		✓	
dibenz(a,h)anthracene	✓		
dichlorobenzene	✓		
1,2-dichloroethene	✓		
di-n-butyl phthalate	✓		
1,2-dichlorobenzene	✓		
1,2-dichloroethane	✓		
dieldrin		✓	
di-n-octyl phthalate	✓		
ethylbenzene	✓		
fluoranthene	✓		

	Yes	No	N/A
fluorene	✓		
hexachlorobenzene	✓		
indeno(1,2,3-cd)pyrene		✓	
lead			✓
manganese			✓
mercury			✓
methylene chloride		✓	
methyl ethyl ketone		✓	
methyl mercury			✓
2-methylnaphthalene		✓	
naphthalene		✓	
nickel			✓
pentachlorophenol			✓
petroleum hydrocarbons		✓	
phenanthrene			✓
phenol			✓
polychlorinated biphenyls (if "yes" please list specific congeners and aroclors on a separate sheet)			✓
polycyclic aromatic hydrocarbons (if "yes", please list specific compounds on a separate sheet, if not listed on this page)			✓
pyrene			✓
selenium			✓
silver			✓
1,1,2,2-tetrachloroethane			✓
tetrachloroethylene			✓
thallium			✓
toluene			✓
1,2-trans dichloroethylene			✓
1,1,1-trichloroethane			✓
trichloroethylene			✓
vinyl chloride			✓
xylene			✓
zinc			✓

Name of person completing form

Company

Site (as defined in the "Instructions")

HOUGHTON

COPY

1.0 INTRODUCTION

Goldman Environmental Consultants, Inc., (GEC) of Braintree, Massachusetts has been retained by Houghton Chemical Corporation (Houghton) to conduct response actions relative to historic releases of oil and/or hazardous materials (OHM) that impacted soil and groundwater at 30 Amor Avenue, Carlstadt, Bergen County, New Jersey (ISRA Case No. E98274), hereinafter the "Site"; refer to Figure 1. This report describes groundwater sampling activities conducted recently by GEC and evaluates potential remedial actions for soil and groundwater. Results of the recent groundwater investigation are provided as a supplement to GEC's *Remedial Investigation Report for Soils and Groundwater (RIR)*, dated April 12, 2002. The evaluation of remedial action alternatives provided is a supplement to the *Remedial Action Workplan (RAW)*, prepared by Hydro-Geo Corporation, dated September, 2000.

The goal of the supplemental groundwater investigation documented herein was to collect a second round of samples from GEC-1 and GEC-2 to confirm/refute the January, 2002 groundwater data and to gather additional data for use in determining whether natural attenuation of groundwater contamination is occurring in the Site aquifer. These data, along with Site data collected during prior sampling rounds, is used in developing alternatives for remediating contamination in Site groundwater. Following is a brief description of remedial investigation activities conducted in June, 2002, a summary and evaluation of the remedial investigation data for January and June, 2002, an evaluation of remedial alternatives and recommendations for Site remediation.

This RIR was prepared in accordance with the Technical Requirements for Site Remediation, N.J.A.C. 7:26E, Section 4.8, and is provided to New Jersey Department of Environmental Protection (NJDEP) in triplicate; one copy includes the entire laboratory Reduced Deliverable package and the two remaining copies include only the laboratory Data Summary sheets. Please note that historical information and a detailed description of the physical setting were provided in prior RIRs, prepared by Hydro-Geo Corporation of Belle Mead, New Jersey, and are not reiterated herein.

2.0 REMEDIAL INVESTIGATION ACTIVITIES

All field activities were conducted in accordance with guidance provided in NJDEP's *Field Sampling Procedures Manual (1992)*. Groundwater samples were submitted under chain-of-custody documentation to STL Edison (STL) of Edison, New Jersey, a state-certified laboratory. Laboratory Certificates of Analysis are provided in Appendix A. Monitoring well purge data and results of physicochemical monitoring conducted during groundwater sampling are provided in Appendix B. Table 1 provides a Goldman Environmental Consultants, Inc.

summary of groundwater samples collected and laboratory analyses conducted in June, 2002. Data on the construction of permanent on-Site monitoring wells is provided in Table 2. Summaries of laboratory analytical data for groundwater samples are provided in Table 3. Sampling locations are depicted on Figure 2. The work undertaken is described below.

On June 4, 2002, GEC collected groundwater samples from five existing wells: MW-1, MW-2, MW-3, GEC-1 and GEC-2. GEC was unable to sample MW-6, which was damaged at the ground surface, or MW-4, which could not be located. GEC elected not to sample MW-5 or MW-7, located outside the apparent bounds of the dissolved-phase groundwater contaminant plume originating at the rear of the Site building, in which OHM typical of the Site were absent or present at low concentrations. Samples from GEC-1 and GEC-2 were submitted to STL for laboratory analysis for volatile organic compounds (VOCs) via USEPA Method 624+10, including MTBE and n-propanol, and semi-volatile organic compounds (SVOCs) or base-neutral compounds via USEPA Method 625+15. Samples from all five wells were submitted for laboratory analysis for methane, ethane and ethane via Method 3810, and nitrate, sulfate, iron and manganese. Refer to Table 3 for a summary of groundwater analytical data and Appendix B for monitoring well purge data and physicochemical groundwater parameter readings recorded during sampling.

3.0 EVALUATION OF REMEDIAL INVESTIGATION DATA

Following is a brief description of groundwater data for sampling conducted by GEC in January and June, 2002. These data are evaluated with respect to existing data for the Site to refine the current understanding of groundwater contamination and for use in developing and screening remedial alternatives and selecting proposed remedial actions. Data for groundwater and soil samples collected prior to the June, 2002 sampling round are summarized in tables provided in Appendices C and D, respectively.

3.1 Historic Groundwater Data

Based on historic groundwater data, monitoring wells MW-1 and MW-2 located proximal to Tank Farm #1/Mixing Area (AOC-4) had the highest levels of groundwater contamination, consisting primarily of chlorinated VOCs (e.g., methylene chloride [MC], 1,1,1-trichloroethane [TCA], tetrachloroethene [PCE] and trichloroethene [TCE]) and their degradation products (e.g., cis-1,2-dichlorethene [DCE], 1,1-dichloroethane [DCA], 1,1-DCE, vinyl chloride [VC], etc.), and to a lesser extent, light-weight petroleum constituents including benzene, toluene, ethylbenzene and xylenes (BTEX). This result

was consistent with both laboratory analytical data and field screening tests of soil samples indicating that soil contamination is greatest beneath the above-ground tank farm. Lower concentrations of several of these VOCs were also detected in MW-3, and to a lesser extent in MW-4 through MW-7.

3.2 Groundwater Data: January, 2002

In January, 2002 GEC installed three monitoring wells (GEC-1, GEC-2 and GEC-3) to further delineate the horizontal and vertical extent of groundwater contamination. GEC-1 and GEC-2 were installed in area of concern #2 (AOC-2), which is located adjacent to AOC-4, near the northwest corner of the Site building. GEC-3 was installed northwest of AOC-2 near the property boundary. Laboratory analysis of groundwater samples collected in January, 2002 from GEC-1 and GEC-2 evidenced higher levels of both chlorinated VOCs and BTEX than detected in other on-Site wells. Groundwater contamination does not appear to be migrating west-northwest of the source area as evidenced by laboratory analytical data for the sample from GEC-3, installed near the railroad tracks, which had only trace concentrations of a few chlorinated VOCs present at or near sample quantitation limits and below groundwater quality standards.

GEC-2 was installed at the northern end of the western truck loading/unloading pad to provide information on groundwater contaminant levels in AOC-2. Data for GEC-2 evidence the highest levels of VOC groundwater contamination detected on-Site to date and suggest the potential presence of free-phase chlorinated solvents in groundwater. These data for GEC-2, a water table well, are particularly striking when compared to data for MW-1, another water table well that is located only 30 feet away. Despite the difference in contaminant concentrations between these wells, the particular VOCs detected are substantially the same and include primarily chlorinated solvents and their related breakdown products, mentioned previously. In addition, diethylphthalate, an SVOC, was detected in GEC-2 at an elevated concentration. Recent data for MW-1 and GEC-2 suggest that groundwater contamination near the northwest corner of the Site building may be the result of spills at the western truck loading/unloading pad, rather than the Tank Farm#1/Mixing Area.

GEC-1 was installed adjacent to MW-1 to determine if heavy, chlorinated solvents in groundwater had migrated downward through the silt and clay. GEC proposed installing this well in the first water encountered beneath the clay. In the soil sample from 33 to 35 feet below grade, GEC encountered equal parts clay and gravel, which was a departure from the overlying 15 to 20 feet of only clay, and elected to install the well at this depth. As discussed previously, laboratory analysis of soil samples from

this boring location showed no contamination at 24 to 26 feet below grade and, with the exception of methylene chloride, only low concentrations of VOCs in the soil sample collected 33 to 35 feet below grade. Since soil samples collected within the water table often exhibit evidence of contamination that is attributable to groundwater, the soil data suggested that there was little groundwater contamination at depth. However, laboratory analysis of groundwater from GEC-1 showed otherwise. The chlorinated solvent and BTEX VOCs detected in MW-1 were also present in the sample from GEC-1, but at higher concentrations.

As a codicil to the evaluation of groundwater data, it is also noted that elevated tentatively identified compound (TIC) readings were reported for VOCs and SVOCs in MW-1, GEC-1 and GEC-2. Apparently, VOC TICs consist primarily of 4-methyl-2-pentanone and to a lesser extent 3,3,5-trimethylcyclohexanone. SVOC TICs consist primarily of 3,3,5-trimethylcyclohexanone and 3,3,5-trimethylcyclohexanol, a chemical intermediary in the manufacture the former compound. The remainder of VOC and SVOC TICs consist of various ketones and unknown alcohols, respectively.

Data for groundwater samples collected from MW-1 and MW-2 between July 1998 and January 2002 document a general trend toward decreasing concentrations of chlorinated solvents, strongly suggesting that natural attenuation of groundwater contamination is occurring at the Site, although several VOCs are still present at concentrations greater than New Jersey Groundwater Quality Standards (GWQS).

3.3 Groundwater Data: June, 2002

On June 4, 2002, GEC re-sampled GEC-1 and GEC-2 to confirm laboratory analytical data for the January, 2002 sampling round. Analysis of groundwater samples collected from these two wells in June yielded similar results to the January sampling round, namely elevated concentrations of chlorinated VOCs and BTEX compounds and similar TICs. Although the concentrations of individual analytes detected in GEC-1 varied between the two sampling rounds, the sum both of the total confident and estimated concentrations of VOCs was consistent. However, contaminant concentrations detected in GEC-2 were roughly one-half of previously detected concentrations. These results confirm results of the January, 2002 sampling round, which indicate that the portion of the aquifer at GEC-1 and GEC-2, located proximal to the northwestern corner of the Site building, has the highest apparent levels of groundwater contamination. Refer to Table 4 for a comparison of groundwater data for samples collected between 1998 and 2002.

Groundwater samples from four wells (GEC-1, GEC-2, MW-1, and MW-2) located within the apparent bounds of the dissolved-phase contaminant plume, which is limited to the immediate vicinity of the source area(s), i.e., the Tank Farm #1/Mixing Area (AOC-4) and the western truck loading/unloading pad (AOC-2), and MW-3 located downgradient/cross-gradient of the source area, were analyzed for methane, ethane, ethane, nitrate, sulfate, iron and manganese. These data were evaluated in conjunction with the physicochemical groundwater parameters, documented in Appendix B, in determining whether anaerobic biodegradation processes are occurring in the Site aquifer.

GEC followed the bioattenuation screening process described in USEPA's *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater* (1998) to assess the potential for natural attenuation via anaerobic biodegradation of chlorinated VOCs in the Site aquifer. This method relies on the fact that anaerobic biodegradation will cause predictable changes in groundwater chemistry. In the screening process, each parameter for samples collected within the source area is scored and assigned a weighted point value ranging between -3 and 3. If the score totals 15 or more points, it is likely that biodegradation is occurring. A total score of more than 20 points is considered strong evidence for anaerobic biodegradation of chlorinated VOCs. The total score for the Houghton Site is 22; refer to the table below.

Analytes	Concentration in Most Contaminated Zone ¹	Points Awarded
Dissolved Oxygen	2.36 mg/L	0
Nitrate	Not Detected	2
Iron	527 mg/L	3
Sulfate	13.7 mg/L	2
Methane	4.43 mg/L	3
Ethene/Ethane	Not Detected	0
ORP	-103.9 mV	2
pH	6.62	0
Temperature	17.8 deg. Celsius	0
BTEX	2.96 mg/L	2
cis-DCE ²	7.67 mg/L	2
1,1-DCA ²	2.95 mg/L	2
VC ²	0.73 mg/L	2
chloroethane ²	2.09 mg/L	2
TOTAL POINTS		22

- 1) Average concentration detected via field screening in June, 2002 during well purging activities at GEC-2, MW-1 and MW-2 or via laboratory analysis of groundwater samples collected from GEC-1, GEC-2, MW-1 and MW-2 in January or June, 2002, as appropriate.
- 2) This compound is likely a product of anaerobic biodegradation (i.e., a daughter product) of the released material.

Based on the foregoing, there is strong evidence that anaerobic biodegradation of chlorinated VOCs is occurring at the Site. The results of the bioattenuation screening process confirm other laboratory analytical data that document a general trend toward decreasing concentrations of chlorinated solvents in groundwater.

4.0 CONCLUSIONS ON REMEDIAL INVESTIGATION

As stated in Section 1.0 of this report, the goal of supplemental Site investigation activities described herein was two-fold: 1) to confirm/refute January, 2002 groundwater data for GEC-1 and GEC-2; and 2) to collect geochemical data for use in determining if biodegradation of chlorinated VOCs is occurring in the Site aquifer. We believe that the recent investigation accomplished both of these goals. However, as noted in the April 12, 2002 *RIR*, delineation of the vertical extent of groundwater contamination is not yet complete.

5.0 SUMMARY OF AREAS OF CONCERN

Figure 2 is a Site Plan showing the on-Site AOCs identified previously. The following is a summary discussion of each AOC.

AOC-1 - Previous 2,000-gallon #2 Heating Oil UST: No Further Action (NFA) for soils at this location was approved by NJDEP.

AOC-2 - Discharge Pipe Area, Western Truck Loading/Unloading Pad: Delineation of soils is complete. Soils impacted by methylene chloride and tetrachloroethene to approximately five feet below grade.

AOC-3 - Rear Discharge Area: A small area between the Mixing Tank and the north fence line has been impacted by low levels of PCE. This area has been delineated. NJDEP has approved including soil contamination detected in AOC-3 in a Deed Notice.

AOC-4 - Mixing Tank Area: The soil delineation around and beneath AOC-4 is complete. Impacts to soils in this area involve primarily PCE and MC with lesser amounts of toluene, ethylbenzene, total xylenes, 1,1,1- TCA and cis-1,2-DCE. Groundwater has also been impacted by the same VOCs.

AOC-5 - Drainage Points, Eastern Truck Loading/Unloading Pad: Delineation of VOCs and base neutral (BN) compounds in this area is complete. NJDEP has granted NFA for contamination in this area, with the exception of n-propanol. As

documented in the April 12, 2002 *RIR*, the extent of n-propanol in AOC-5 soils has been delineated.

AOC-6 - Loading Bays: Delineation of low levels of BN compounds below the asphalt is complete.

AOC-7 - Soil Pile: NFA was granted by NJDEP.

AOC-8 - Groundwater: Levels of chlorinated VOCs, including MC, VC, 1,1-DCA, cis-1,2-DCE, 1,1,1-TCA, 1,2-dichloropropane, TCE and aromatic VOCs including BTEX are present in AOC-2 and AOC-4 at concentrations exceeding the New Jersey GWQS. Low levels of benzene and methylene chloride are also present in AOC-1 at concentrations that are slightly greater than the GWQS.

6.0 RECOMMENDATIONS

Following are separate discussions of remedial alternatives for soil and groundwater contamination and recommendations for additional subsurface investigation work to determine the vertical extent of groundwater contamination are provided in the herein. The evaluation and selection of remedial alternatives draws upon the findings of recent and historic remedial investigations conducted by GEC and others is provided as a supplement to the *RAW* to the extent that previously proposed remedial actions have been revised.

6.1 Groundwater Remedial Plan

Volatile contaminants related to apparent on-Site releases are present in groundwater in AOC-1, AOC-2 and AOC-4 at concentrations that exceed the New Jersey GWQS. Groundwater in AOC-4 is impacted by chlorinated VOCs and BTEX. Benzene and methylene chloride have been detected in AOC-1, located downgradient/crossgradient of AOC-4. Laboratory analytical data for GEC-3, installed west of AOC-4 near the property boundary, and seven temporary piezometers (PZ-1 through PZ-7) installed across Amor Avenue, cross-gradient/downgradient of AOC-1, indicate that groundwater contamination is not migrating off-Site. As noted previously, concentrations of chlorinated VOCs have been detected at concentrations that suggest free-phase solvent as a dense non-aqueous phase liquid (DNAPL) may be present in AOC-2, although a Sudan IV dye test was negative.

6.1.1 Effectiveness Analysis and Certification: Groundwater

In the *RAW*, an Effectiveness Analysis and Certification (EAC) was conducted to evaluate various remedial action alternatives that were considered to offer the greatest likelihood of reducing groundwater contaminant concentrations to levels below GWQS. Among the remedial actions evaluated were: 1) bioremediation; 2) dual-phase extraction; 3) pump and treat; 4) solar evaporation; and 5) natural attenuation.

The *RAW* identified groundwater recovery in AOC-4 as the best alternative for remediating groundwater contamination beneath and adjacent to the above-ground tank farm. Under this plan, three recovery wells would be used to pump groundwater from AOC-4 into a temporary holding tank. Depending on the season, groundwater in the holding tank would either be pumped to the roof of the Site building for solar evaporation or to a tanker for off-Site disposal. Remediation via natural attenuation and periodic groundwater monitoring was proposed for AOC-1. In addition to the selected remedial alternatives, a Classification Exception Area (CEA) was proposed for the entire site for chlorinated and aromatic VOCs. The CEA would remain in effect until contaminant concentrations were reduced to levels below the GWQS.

In its June 6, 2001 correspondence to Houghton, NJDEP cited the poor sustainable yield for the aquifer, as determined by on-Site slug testing, in observing that groundwater recovery with solar evaporation or off-Site disposal may not be the most efficient way to remediate contaminated groundwater at the Site. In commenting on this remedial option, NJDEP recommended Houghton investigate innovative remedial techniques, such as injection.

Since submittal of the *RAW* Houghton has taken the opportunity to install several additional monitoring wells and collect two additional rounds of groundwater samples to better define the nature and extent of contamination. Using the data generated during these and previous investigations, Houghton developed the following remedial actions to address contaminated groundwater.

6.1.2 Proposed Remedial Actions: Groundwater

As noted by NJDEP, in an aquifer with a sustainable pumping yield of approximately 0.2 gallons per minute, any remedial option that involves pumping groundwater to a tank for treatment, solar evaporation or off-Site disposal, is not the most efficient remedial alternative. As noted in Section 3.3 herein, there is strong evidence that anaerobic biodegradation of chlorinated VOCs in groundwater is occurring at the Site. The results of the bioattenuation screening process confirm other laboratory

analytical data that document a general trend toward decreasing concentrations of chlorinated solvents. Houghton proposes injecting of Hydrogen Release Compound (HRC) into the aquifer at AOC-2 and AOC-4 to take advantage of the ongoing natural attenuation processes by enhancing anaerobic biodegradation. Groundwater contamination in AOC-1 will be addressed via monitored natural attenuation, as proposed in the *RAW*. As proposed in the *RAW*, Houghton will file paperwork for a CEA for AOC-1, AOC-2 and AOC-4. The draft CEA provided in the *RAW* will be updated prior to filing. The CEA will remain in effect for a period of seven years or until New Jersey GWQS are achieved.

Groundwater Remediation Using HRC

HRC is manufactured and marketed by the Regenesis corporation and offers a passive, low-cost approach to rapid remediation of chlorinated solvent impacted sites. The active ingredient in HRC, is an environmentally safe polyactate ester that is specially formulated for slow release of lactic acid upon contact with water in the subsurface environment. Lactic acid is broken down by indigenous microbes resulting in the release of hydrogen, which enhances the reductive chlorination of the chlorinated solvents, i.e., the transformation of a chlorinated contaminant into a non-toxic compound such as ethane or ethene. In addition to stimulating the anaerobic degradation of dissolved-phase contaminants, HRC will also desorb and degrade residual DNAPL. To treat a groundwater contaminant plume the HRC is injected directly into the plume via multiple push-points or boreholes. HRC typically maintains a continuous, low concentration of hydrogen in the subsurface environment for a period of 6 months to one year.

Designs for HRC-based bioremediation projects are based on delivering HRC into contaminated groundwater plumes in a grid or barrier pattern, or a combination of both. The selection of the appropriate design depends primarily on the size of the plume requiring remediation, groundwater velocity, site accessibility to injection equipment, and desired time frame for remediation. Grid-based designs are typically recommended for small, stationary contaminant plumes like the one at the Houghton facility where a relatively short remediation period is desired. The primary issues in designing the HRC injection grid are: 1) the amount of HRC required to support biodegradation of a given amount of contaminant; and 2) the number of delivery locations needed to effectively distribute hydrogen within the contaminant plume

The HRC injection grid for Houghton was designed using software developed by Regenesis, Site-specific information on groundwater contaminant concentrations and aquifer characteristics (e.g., hydraulic conductivity, hydraulic gradient and pore volume) gathered during the remedial investigation and, where necessary, values estimated from

the scientific literature. Upon inputting the required data, the software calculates the mass of HRC in pounds that is needed to enhance conditions in the subsurface environment that favor anaerobic biodegradation.

HRC injection grids were designed for two scenarios: 1) a limited scale pilot test; and 2) remediation of the entire contaminant plume. The purpose of the pilot test is to determine definitively whether the aquifer and the contaminants are amenable to HRC-enhanced anaerobic biodegradation. If results of the pilot test indicate that HRC is effective, the entire plume will be injected with HRC. The following table describes the sources of the Site-specific data and identifies assumptions input in the Regenesis software for the two remediation scenarios. Laboratory analytical data used for the pilot test scenario are for samples collected from monitoring well MW-2 during the January, 2002 sampling round. Laboratory data used for the entire plume scenario are the arithmetic mean of two rounds of groundwater samples collected in January and June, 2002 from GEC-2, which typically exhibited the highest contaminant concentrations at the Site. Field screening data for these wells are for the June, 2002 sampling round. These data along with aquifer characteristic data provided in the *RAW* were entered into the Regenesis software to obtain an estimate of the mass of HRC needed to effect remediation via HRC-enhanced anaerobic biodegradation; spreadsheets for the two design scenarios are provided in Appendix E. Refer to Figure 3 for the boundaries of the pilot test area and the entire contaminant plume.

Input Parameter	Input Value		Comment
	Pilot Test	Entire Plume	
Site Conceptual Model			
-width of plume	25 ft	100 ft	Assumed. Refer to Figure 3.
-length of plume	25 ft	62.5 ft	Assumed. Refer to Figure 3.
-thickness of contaminated saturated zone	10 ft	10 ft	Assumed. Refer to Figure 3.
-total porosity	0.35	0.35	Provided in <i>RAW</i> .
-hydraulic conductivity	4.46 ft/day	2.4 ft/day	Provided in <i>RAW</i>
-hydraulic gradient	0.012 ft/day	0.012 ft/day	Provided in <i>RAW</i>
Dissolved Phase Electron Donor Demand (mg/L)			
-PCE	0.0029	0.047	Laboratory analysis of gw sample.
-TCE	0.016	0.27	Laboratory analysis of gw sample.
-cis-1,2-DCE	0.67	34	Laboratory analysis of gw sample.
-VC	0.12	3.2	Laboratory analysis of gw sample.
-chloroform	0.00095	0.036	Laboratory analysis of gw sample.
-carbon tetrachloride	0.0012	0.045	Laboratory analysis of gw sample.
-1,1,1-TCA	0.14	0.81	Laboratory analysis of gw sample.
-1,1-DCA	0.52	16	Laboratory analysis of gw sample.
-hexavalent chromium	not analyzed	not analyzed	None.
Sorbed Phase Electron Donor Demand			
-soil bulk density	1.7 g/cu. cm	1.7 g/cu. cm	Default assumption per Regenesis.
-fraction of organic carbon	0.005	0.005	Default assumption per Regenesis.

Input Parameter	Input Value		Comment
	Pilot Test	Entire Plume	
Competing Electron Acceptors			
-oxygen	3.33 mg/L	1.46 mg/L	Field screening.
-nitrate	0.05 mg/L	0.05 mg/L	Laboratory analysis of gw sample.
-est. Mn reduction demand	3.95 mg/L	9.62 mg/L	Laboratory analysis of gw sample.
-est. Fe reduction demand	683 mg/L	469 mg/L	Laboratory analysis of gw sample.
-est. sulfate reduction demand	16 mg/L	2.5 mg/L	Laboratory analysis of gw sample.
Injection Point Spacing and Dose			
-injection spacing within rows	7.5 ft	7.5 ft	Assumed. Based on aquifer porosity.
-injection spacing between rows	7.5 ft	7.5 ft	Assumed. Based on aquifer porosity.

As discussed previously, more investigation is necessary to determine the vertical extent of groundwater contamination. Since groundwater contamination was found in GEC-1, which is screened 23 to 33 feet below grade, the thickness of the contaminated saturated zone is likely greater than 10 feet. Therefore, the mass of HRC needed to effectively treat the contaminant plume may be greater than calculated with the above assumptions; however, the assumptions are adequate for purposes of conducting the pilot test. The HRC injection design for the entire plume will be modified, if necessary, based on data for planned investigation activities to determine the vertical extent of contamination.

Groundwater Sampling Plan for HRC and Monitored Natural Attenuation

To monitor the effectiveness of the HRC pilot test for AOC-2 and AOC-4 and to document the natural attenuation of groundwater contamination in AOC-1, periodic groundwater sampling is recommended. Houghton recommends sampling MW-2, located at the center of the area proposed for the HRC pilot test, immediately prior to HRC injection and three months after HRC injection with samples analyzed for VOCs via USEPA Method 624+10, SVOCs via USEPA Method 625+15, methane, ethane and ethane via Method 3810, and nitrate, sulfate, iron and manganese. After three months it should be clear whether the HRC is working and contaminant concentrations are decreasing. If the HRC is effective, the entire groundwater contaminant plume should be treated and MW-1, MW-2 and GEC-2 sampled on a quarterly basis for the above-listed analytes. Bi-annual sampling of MW-3 and MW-5 is recommended, with samples analyzed for VOCs via USEPA Method 624+10, to document changes in contaminant concentrations in AOC-1, selected for monitored natural attenuation (MNA).

Supplemental Groundwater Investigation: Vertical Extent of Contamination

Houghton recommends installing three additional test borings to be completed as monitoring wells for use in determining the vertical extent of groundwater contamination in AOC-2 and AOC-4; refer to Figure 2 for proposed boring/well locations. Borings will be installed with a truck-mounted, hollow-stem auger drill rig. Soil borings will be advanced to a depth of 30 to 45 feet, with the intent being to install a well screen below the zone of varved clay that typical of the aquifer at the water table. Soil samples will be collected using a split-spoon sampler at standard five-foot sampling intervals and screened for total ionizable compounds using a photoionization detector (PID) equipped with a 11.7 eV lamp.

Groundwater monitoring wells installed in each soil boring will be constructed of 4-inch I.D. Schedule 40 PVC 0.010-inch slotted screen and 4-inch I.D. Schedule 40 PVC riser. No glues or solvents will be employed in the construction of the wells. Each will be constructed with a natural sand filter set in the borehole annulus surrounding the well screen. A bentonite seal will be place above the sand filter and the remainder of each well column filled with sand pack or clean backfill. To protect the wells, a flush-mounted steel road-box will be installed and held in place by a cement collar. The newly installed wells will be surveyed by a Licensed Land Surveyor and tied into the survey for existing on-Site wells. The appropriate well construction and survey forms will be completed and provided to NJDEP.

Groundwater samples will be collected from the proposed wells no earlier than two weeks after installation and samples will be submitted for laboratory analysis for VOCs via USEPA Method 624+10 and SVOCs via USEPA Method 625+15.

6.2 Soil Remediation Plan

As discussed in the *RAW*, three AOC contain soils that are impacted by organic compounds at concentrations above the New Jersey Impact to Groundwater (IGW) or non-residential (NR) soil cleanup levels, with the majority of contaminated soils located within AOC-2 and AOC-4. An estimated 2,800 pounds (lbs) of VOCs are contained within approximately 400 cubic yards (cy) of soil distributed in dissolved and adsorbed phases within the soil and water table in these two AOC. Although no free product was detected during subsurface investigations, the relatively high concentrations of chlorinated VOCs detected in groundwater samples from GEC-2 suggest that free-phase solvents may exist in AOC-2.

6.2.1 Effectiveness Analysis and Certification: Soil

In the *RAW*, an Effectiveness Analysis and Certification (EAC) was conducted to evaluate various remedial action alternatives that were considered to offer the greatest likelihood of reducing or eliminating the potential for receptor exposure to contaminants of concern at AOC-2 and AOC-4 while protecting public health, safety and the environment. Among the remedial actions evaluated were: 1) soil vapor extraction/air sparging (SVE/AS); 2) excavation; 3) encapsulation; and 4) bioflushing.

The *RAW* concluded that SVE/AS was not a viable remedial option given the relatively shallow water table, which limits the effectiveness of such systems. Selective excavation of contaminant "hotspots" was recommended for remediating VOC-contaminated soils in AOC-2 and AOC-4 (i.e., those areas located outside the above-ground tank farm). Encapsulation or capping was recommended for marginally contaminated soils in AOC-3 and AOC-6, and for AOC-2 and the portion of AOC-4 located outside the above-ground tank farm following the excavation of soil hotspots. Encapsulation would be completed after hotspot excavation and would be accompanied by a deed notice to restrict future access to soils. NJDEP did not approve the use of bioflushing, which was recommended in the *RAW* to remediate soils located beneath the above-ground tank farm in AOC-4 and directed that Houghton develop an alternate strategy for remediating these soils. As discussed below, Houghton believes that HRC injection, which is recommended to enhance the ongoing natural attenuation of chlorinated VOCs in AOC-4 groundwater, will also facilitate a reduction in soil contamination at this location.

Further detail on the proposed remedial actions for soil, including discussion of the recommended remedial alternative for AOC-4 soils beneath the tank farm, are provided below.

6.2.2 Proposed Remedial Actions: Soil

Houghton proposes selective excavation of contaminated soil hotspots in AOC-2 and AOC-4, encapsulation or capping of marginally contaminated soils in AOC-3 and AOC-6 and following hotspot excavation, encapsulation for AOC-2 and the portion of AOC-4 located outside the above-ground tank farm. Depth to groundwater ranges between 1 to 5 feet across the Site and between 1 to 3 feet in the vicinity of the above-ground tank farm. Since the tank farm is situated approximately 1 to 2 feet below grade, only 1 to 2 feet of vadose zone soils are present beneath the tank farm. Houghton believes that contamination in the vadose zone soils will be degraded over time by HRC

in groundwater when the vadose zone soils are saturated during periods of an elevated water table resulting from normal, seasonal fluctuation in the water table.

Hotspot Soil Excavation

Houghton proposes excavating approximately 50 to 60 cy of soil contaminated with chlorinated VOCs at the northwestern corner of the Site building, adjacent to the above-ground tank farm. Boundaries of the proposed excavation area were determined by reviewing laboratory analytical data and field screening data for soil at this AOC-2/AOC-4 location; refer to Figure 4. Within the proposed excavation bounds are four soil sampling locations (H-8, H-19, H-19.1 and #13) where one or more compounds were detected at concentrations exceeding New Jersey IGW. GEC will supervise excavation work, which will be subcontracted to Clean Venture, Inc. (CVI). CVI will "live-load" excavated soil directly into dump trailers to avoid potential hazards associated with temporary stockpiling of soils and to minimize disruptions to normal facility operations. Soil targeted for removal is considered an "F List" waste, due to the nature of the contaminants, and will be handled and disposed of accordingly.

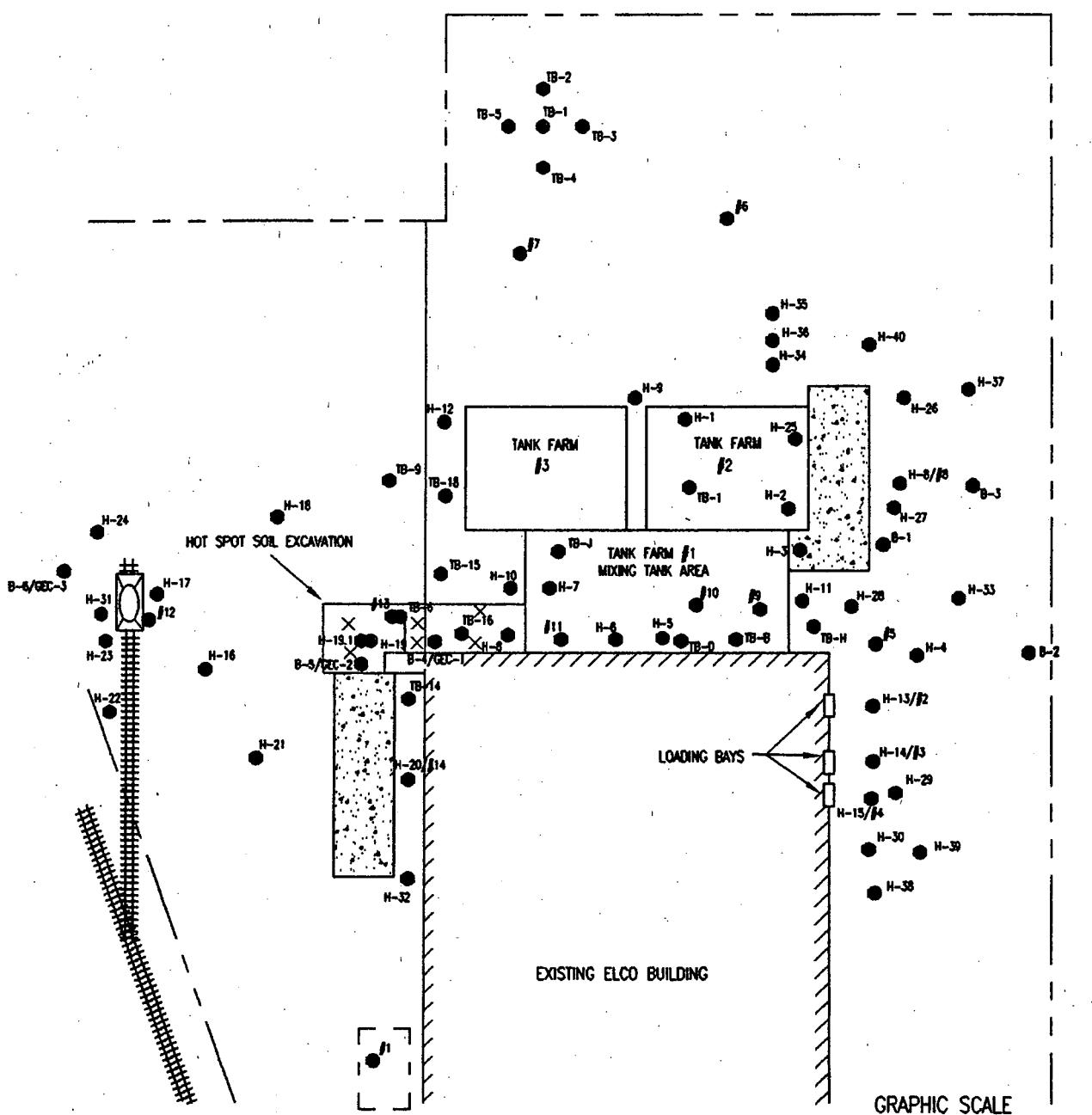
During soil excavation activities, GEC will screen soil samples from the floor and sidewalls of the excavation using a PID equipped with a 11.7 eV lamp. As illustrated in Figure 4, excavation dimensions will be approximately 75 feet long, 10 feet wide, and 2 feet deep or to the water table, whichever comes first. Six confirmatory soil samples will be collected from the excavation and submitted for laboratory analysis for VOC and SVOC via USEPA Methods 624+10 and 625+15, respectively, to document residual soil concentrations; refer to Figure 4 for confirmatory sampling locations. The excavation will be backfilled with certified clean fill and underlying soils encapsulated as described below.

Soil Encapsulation

Encapsulation or capping was recommended for marginally contaminated soils in AOC-3 and AOC-6, and for AOC-2 and the portion of AOC-4 located outside the above-ground. These areas of the Site are presently covered by bituminous pavement or a 12 to 18-inch layer of crushed stone and stone dust. The crushed stone cap at the northwest corner of the Site building will be repaired be after hotspot excavation work is complete and a deed notice filed to restrict future access to soils by human or environmental receptors. A copy of the deed notice was provided in the *RAW*.

HRC Treatment of Soils Underlying Above-Ground Tank Farm

It is not possible to excavate contaminated soils located beneath the above-ground tank farm without seriously disrupting operations at the on-Site facility. Therefore, few



LEGEND

— - - - PROPERTY LINE



SITE BUILDING



SOIL BORING LOCATION

RAILROAD EASEMENT



CONFIRMATORY SOIL SAMPLE

NOTES

(IN FEET)

- 1.) THIS DRAWING IS A GRAPHICAL REPRESENTATION ONLY AND SHOULD NOT BE USED AS A SURVEY.
- 2.) BASEMAP TAKEN FROM GEC MAP #031502B.

GEC

ELCO SOLVENTS

30 AMOR AVENUE, CARLSTADT, NJ

ID# 031502C

Goldman Environmental Consultants, Inc.
60 Brooks Drive, Braintree, MA 02184
(781) 356-9140 Fax: (781) 356-9147

**PROPOSED HOTSPOT
SOIL EXCAVATION**

CLIENT: HOUGHTON CHEMICALS

SCALE: AS SHOWN DRAWN BY: JF

DATE: 7-31-02 CHECKED BY: PS

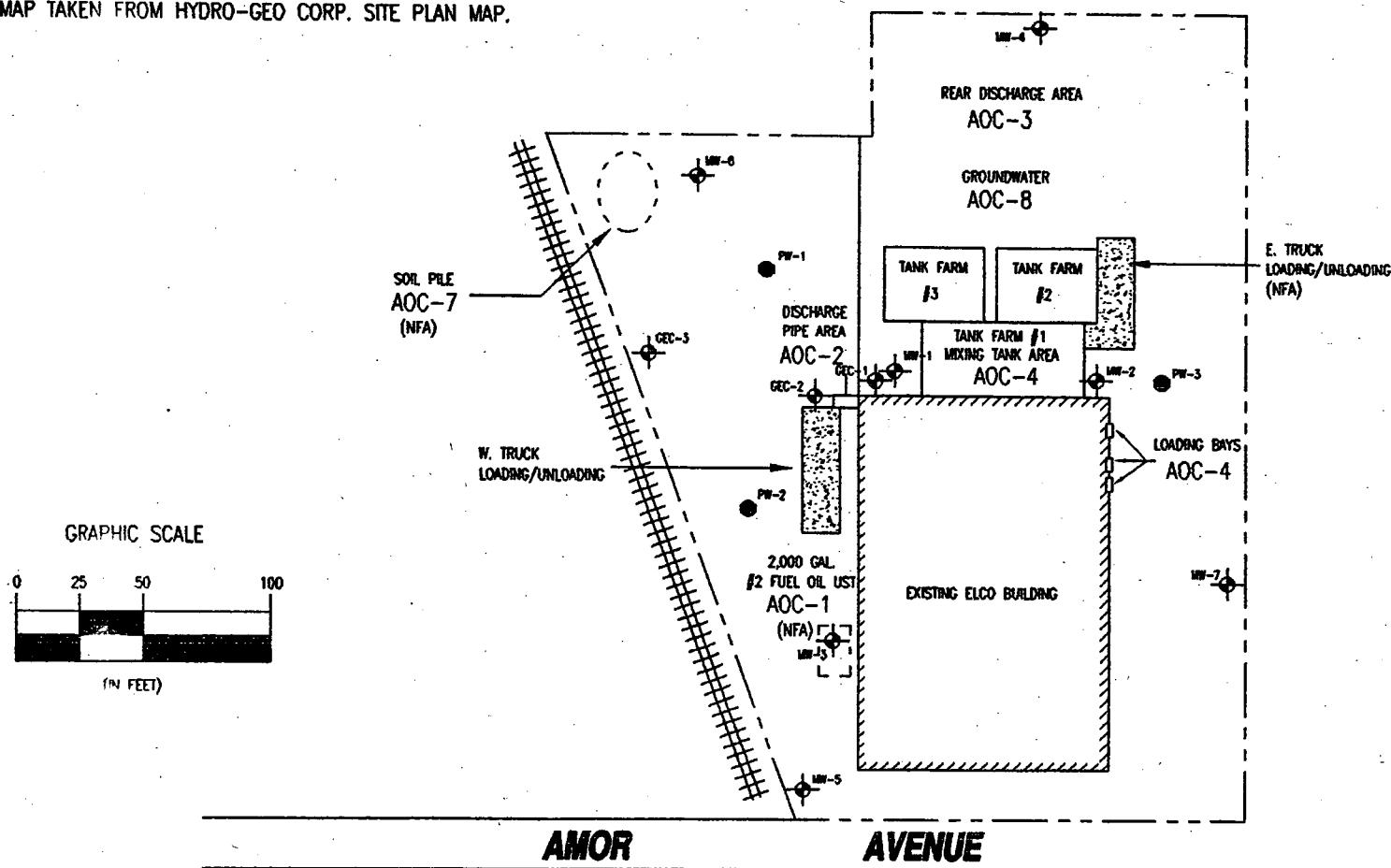
4

FIGURE NO.

1061-1020
PROJECT NO.

NOTES

- 1.) THIS DRAWING IS A GRAPHICAL REPRESENTATION ONLY AND SHOULD NOT BE USED AS A SURVEY.
- 2.) BASEMAP TAKEN FROM HYDRO-GEO CORP. SITE PLAN MAP.



LEGEND

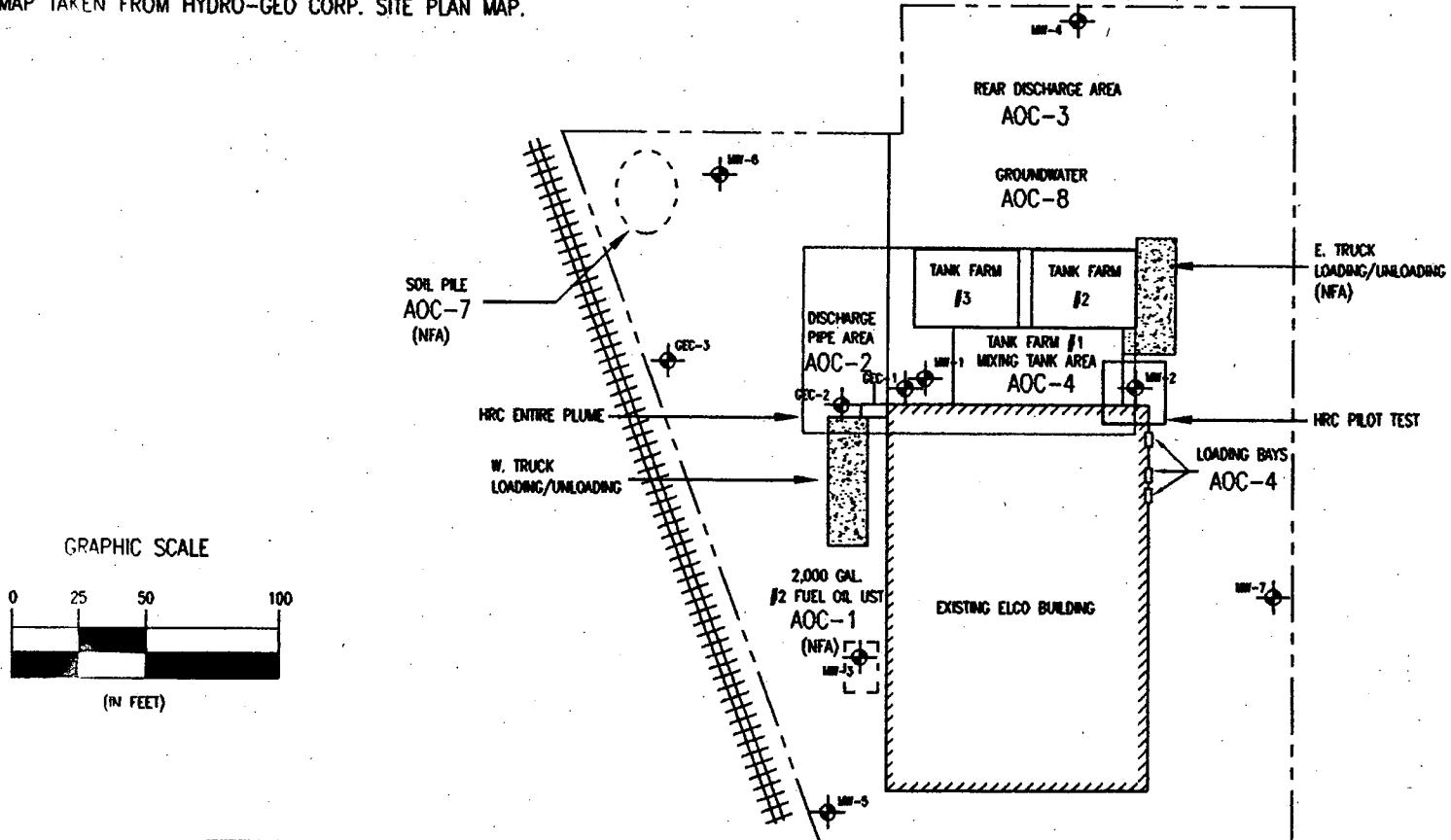
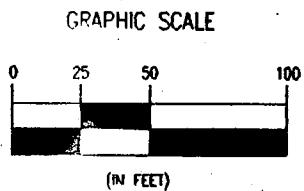
AOC-1	AREA OF CONCERN
(NFA)	NO FURTHER ACTION
MONITORING WELL	
PROPERTY LINE	
RAILROAD EASEMENT	
PW-2	PROPOSED MONITORING WELL

ELCO SOLVENTS		SITE PLAN WITH AREAS OF CONCERN AND PROPOSED WELLS	
30 AMOR AVENUE, CARLSTADT, NJ			
GEC	ID# 031502B	CLIENT: HOUGHTON CHEMICALS	
Goldman Environmental Consultants, Inc. 60 Brooks Drive, Braintree, MA 02184 (781) 356-9140 Fax: (781) 356-9147		SCALE: AS SHOWN	DRAWN BY: JF
		DATE: 7-31-02	CHECKED BY: PS

2
FIGURE NO.
1061-1020
PROJECT NO.

NOTES

- 1.) THIS DRAWING IS A GRAPHICAL REPRESENTATION ONLY AND SHOULD NOT BE USED AS A SURVEY.
- 2.) BASEMAP TAKEN FROM HYDRO-GEO CORP. SITE PLAN MAP.



LEGEND

AOC-1	AREA OF CONCERN
(NFA)	NO FURTHER ACTION
-----	MONITORING WELL
-----	PROPERTY LINE
	RAILROAD EASEMENT

ELCO SOLVENTS		PROPOSED HRC INJECTION AREAS	
30 AMOR AVENUE, CARLSTADT, NJ			
GEC	ID# 031502B	CLIENT: HOUGHTON CHEMICALS	
Goldman Environmental Consultants, Inc.		SCALE: AS SHOWN	DRAWN BY: JF
60 Brooks Drive, Braintree, MA 02184		DATE: 7-31-02	CHECKED BY: PS
(781) 356-9140 Fax: (781) 356-9147			

3

FIGURE NO.
1061-1020
PROJECT NO.

ADDENDUM A

Products that have gone through warehouse '84 since acquisition

205	RUBBER SOLVENT	RDRUM
230	RUBBER SOLVENT	PAIL
600	HEXANES	BULK
605	HEXANES	RDRUM
606	HEXANES	NDRUM
607	HEXANES	30DRUM
630	HEXANES	MPAIL
650	MAXIT BULK BLEND	BULK
655	MAXIT BLEND	PPAIL
658	HEXANES	REP275
700	HEPTANES	BULK
705	HEPTANES	RDRUM
706	HEPTANES	NDRUM
730	HEPTANES	PAIL
758	HEPTANES	REP275
1000	LACQUER DILUENT	BULK
1005	LACQUER DILUENT	RDRUM
1030	LACQUER DILUENT	PAIL
1500	VM & P NAPHTHA EC	BULK
1505	VM & P NAPHTHA EC	RDRUM
1520	VM & P NAPHTHA EC	PAIL
1530	FINAL WASH	MPAIL
1540	FINAL WASH	CS(6)
1557	VM & P NAPHTHA EC	TOTE
1558	VM & P NAPHTHA EC	TOTE
2000	MINERAL SPIRITS	BULK
2005	MINERAL SPIRITS	RDRUM
2030	MINERAL SPIRITS	MPAIL
2200	MINERAL SPIRITS E.C.	BULK
2205	MINERAL SPIRITS E.C.	RDRUM
2207	MINERAL SPIRITS E.C.	30DRUM
2230	MINERAL SPIRITS E.C.	MPAIL
2258	MINERAL SPIRITS E.C.	REP275
2405	HI-SOLV MINERAL SPIRITS	RDRUM
2600	SHELLSOL D38	BULK
2605	SHELLSOL D38	RDRUM
2607	SHELLSOL D38	NDRUM
2630	SHELLSOL D38	PAIL
2800	SHELLSOL D60	BULK
2805	SHELLSOL D60	RDRUM
2806	SHELLSOL D60	MPAIL
3205	KEROSENE CLEAR	RDRUM
4000	SR 40	BULK
4005	MINERAL SEAL OIL	DRUM
5000	MINERAL SPIRITS, ODORLESS	BULK
5005	MINERAL SPIRITS, ODORLESS	RDRUM
5006	MINERAL SPIRITS, ODORLESS	NDRUM
5007	MINERAL SPIRITS, ODORLESS	30DRUM
5008	MINERAL SPIRITS, ODORLESS	PDRUM
5009	MINERAL SPIRITS, ODORLESS	15DRUM
6500	EXXSOL D40 NAPHTHA	BULK
6505	EXXSOL D40 NAPHTHA	DRUM
6507	EXXSOL D40 NAPHTHA	30DRUM

Products that have gone through warehouse 84 since acquisition

6558	EXXSOL D40 NAPHTHA	REP275
7900	TOLUENE (R)	BULK
8000	TOLUENE	BULK
8005	TOLUENE	RDRUM
8006	TOLUENE	NDRUM
8007	TOLUENE	30DRUM
8030	TOLUENE	MPAIL
8058	TOLUENE	REP275
8059	TOLUENE	TOTE
8200	XYLENE	BULK
8205	XYLENE	RDRUM
8206	XYLENE	NDRUM
8207	XYLENE	3DRUM
8230	XYLENE	MPAIL
8258	XYLENE	TOTE
8400	AROMATIC 100	BULK
8405	AROMATIC 100	RDRUM
8407	AROMATIC 100	30DRUM
8430	AROMATIC 100	MPAIL
8600	AROMATIC 150	BULK
8605	AROMATIC 150	RDRUM
8630	AROMATIC 150	MPAIL
8658	AROMATIC 150	TOTE
8659	AROMATIC 150	TOTE
10000	METHANOL	BULK
10001	METHANOL IN CYLINDERS	CCYL
10005	METHANOL	RDRUM
10006	METHANOL	NDRUM
10007	METHANOL	NDRUM
10008	METHANOL	PDRUM
10030	METHANOL	MPAIL
10040	METHANOL	CS(6)
10059	METHANOL	REP330
10200	BULK WINDSHIELD WASH CONC.	BULK
10208	WINDSHIELD WASHER CONCENTRATE	PDRUM
10209	SPECIAL 55% WINDOW WASH MIX	PDRUM
10231	WINDSHIELD WASHER CONCENTRATE	PPAIL
10300	BULK WINDSHIELD WASH PREMIX	BULK
10308	WINDSHIELD WASH PREMIX	PDRUM
10309	WINDSHIELD WASH PREMIX -NO DYE	PDRUM
10500	BULK PREMIUM 50 W/W CONC	BULK
10700	BULK SPECIAL 55% W/W CONC	BULK
11000	ISOPROPANOL 99%	BULK
11005	ISOPROPANOL 99%	RDRUM
11006	ISOPROPANOL 99%	NDRUM
11007	ISOPROPANOL 99%	30DRUM
11030	ISOPROPANOL 99%	PAIL
11032	ISOPROPANOL 99%	6PAIL
11040	ISOPROPANOL 99%	CS(6)
11043	GAMMA BUTYROLACTONE	BULK
11058	ISOPROPANOL 99%	REP275
11500	DO NOT USE - USE 500500	BULK
11505	DO NOT USE - USE 500505	RDRUM

Products that have gone through warehouse 84 since acquisition

11530	DO NOT USE - USE 500530	MPAIL
12000	ISOBUTANOL	BULK
12005	ISOBUTANOL	RDRUM
12156	DIMETHYL FORMAMIDE (DMF)	FDRUM
12200	DF 2000, DRYCLEANING FLUID	BULK
12242	DF 2000, DRYCLEANING FLUID	RDRUM
12330	MONOETHANOLAMINE	PAIL
12360	MONOETHANOLAMINE	FDRUM
12500	N-BUTANOL	BULK
12505	N-BUTANOL	RDRUM
12511	PM4084(SP INDUST'L SOLV.)200PR	DRUM
12530	N-BUTANOL	PAIL
12600	DIPROPYLENE GLYCOL ETHER DPM	BULK
12605	DIPROPYLENE GLYCOL ETHER DPM	RDRUM
12609	DIPROPYLENE GLYCOL ETHER DPM	FDRUM
12658	DIPROPYLENE GLYCOL ETHER DPM	TOTE
14000	TEXANOL ESTER ALCOHOL	BULK
14005	TEXANOL ESTER ALCOHOL	RDRUM
14030	TEXANOL ESTER ALCOHOL	PAIL
14043	GAMMA BUTYROLACTONE	FDRUM
14560	TERGITOL 15-S-9	DRUM
15005	PROP SOLV FORM 3 (REG)	RDRUM
15100	PM 509 PROP. SOLVENT 200 PR	BULK
15105	PM 509 PROP. SOLVENT 200 PR	RDRUM
15106	PM 509 PROP. SOLVENT 200 PR	NDRUM
15107	PM 509 PROP. SOLVENT 200 PR	DRUM
15156	DIMETHYL FORMAMIDE (DMF)	MPAIL
16505	PM4217(SP INDUST'L SOLV.)200PR	RDRUM
16530	S.I.S. FORM D-2 (ANHYD)	MPAIL
17000	ETHYL ACETATE 99.5% UG	BULK
17005	ETHYL ACETATE 99.5% UG	RDRUM
17006	ETHYL ACETATE 99.5% UG	NDRUM
17030	ETHYL ACETATE 99.5% UG	PAIL
17058	ETHYL ACETATE 99.5% UG	TOTE
17400	ISOPROPYL ACETATE 99%	BULK
17405	ISOPROPYL ACETATE 99%	RDRUM
17406	ISOPROPYL ACETATE 99%	NDRUM
17430	ISOPROPYL ACETATE 99%	PAIL
17600	PROPYL ACETATE	BULK
17605	PROPYL ACETATE	RDRUM
17606	PROPYL ACETATE	NDRUM
17607	PROPYL ACETATE	30DRUM
17630	PROPYL ACETATE	PAIL
17800	ISOBUTYL ACETATE 99%	BULK
17805	ISOBUTYL ACETATE 99%	RDRUM
18000	N-BUTYL ACETATE UG	BULK
18005	N-BUTYL ACETATE UG	RDRUM
18030	N-BUTYL ACETATE UG	PAIL
18058	N-BUTYL ACETATE UG	TOTE
18107	AMYL ACETATE	FDRUM
18200	PROP. GLYCOL ETHER PM ACETATE	BULK
18205	PROP. GLYCOL ETHER PM ACETATE	RDRUM
18230	PROP. GLYCOL ETHER PM ACETATE	PAIL

Products that have gone through warehouse 84 since acquisition

19000	ACETONE	BULK
19006	ACETONE	RDRUM
19007	ACETONE	30DRUM
19009	ACETONE	NDRUM
19025	ACETONE	20DRUM
19030	ACETONE	MPAIL
19040	ACETONE	CS(6)
19057	ACETONE	TOTE
19058	ACETONE	REP275
19200	METHYL ETHYL KETONE	BULK
19205	METHYL ETHYL KETONE	RDRUM
19206	METHYL ETHYL KETONE	NDRUM
19207	METHYL ETHYL KETONE	30DRUM
19208	METHYL ETHYL KETONE	TOTE
19230	METHYL ETHYL KETONE	MPAIL
19240	METHYL ETHYL KETONE	(CS)6
19258	METHYL ETHYL KETONE	REP275
19400	METHYL ISOBUTYL KETONE	BULK
19405	METHYL ISOBUTYL KETONE	RDRUM
19406	METHYL ISOBUTYL KETONE	NDRUM
19430	METHYL ISOBUTYL KETONE	PAIL
19458	METHYL ISOBUTYL KETONE	REP275
19600	DIACETONE ALCOHOL	BULK
19605	DIACETONE ALCOHOL	RDRUM
19630	DIACETONE ALCOHOL	MPAIL
19800	CYCLOHEXANONE	BULK
19805	CYCLOHEXANONE	RDRUM
19830	CYCLOHEXANONE	MPAIL
20000	ETHYLENE GLYCOL INDUSTRIAL GRD	BULK
20005	ETHYLENE GLYCOL INDUSTRIAL GRD	RDRUM
20030	ETHYLENE GLYCOL INDUSTRIAL GRD	PAIL
20100	ETHYLENE GLYCOL ANTIFREEZE GRD	BULK
20105	ETHYLENE GLYCOL ANTIFREEZE GRD	RDRUM
20304	MACGUARD UNIVERSAL ANTIFREEZE	ADRUM
20506	PREMIX PENCOOL ANTIFREEZE	RDRUM
20600	PREMIX PENCOOL ANTIFREEZE	BULK
21000	DIETHYLENE GLYCOL	BULK
21005	DIETHYLENE GLYCOL	RDRUM
22000	PROPYLENE GLYCOL IND'L GRADE	BULK
22006	PROPYLENE GLYCOL IND'L GRADE	RDRUM
22030	PROPYLENE GLYCOL IND'L GRADE	PAIL
25000	GLYCOL ETHER EB	BULK
25005	GLYCOL ETHER EB	RDRUM
25007	GLYCOL ETHER EB	30DRUM
25030	GLYCOL ETHER EB	MPAIL
25031	GLYCOL ETHER EB	PAIL
25058	GLYCOL ETHER EB	REP275
25400	GLYCOL ETHER DM	BULK
25405	GLYCOL ETHER DM	RDRUM
26000	DO NOT USE - USE 521100	BULK
26005	DO NOT USE - USE 521105	RDRUM
26200	DO NOT USE - USE 12600	BULK
26205	DO NOT USE - USE 12605	RDRUM

Products that have gone through warehouse 84 since acquisition

28000	METHYLENE CHLORIDE, TECH. GR.	BULK
28005	METHYLENE CHLORIDE, TECH. GR.	NDRUM
28030	METHYLENE CHLORIDE, TECH. GR.	MPAIL
28205	1,1,1 TRICHLOROETHANE	RDRUM
28400	TRICHLOROETHYLENE	BULK
28405	TRICHLOROETHYLENE	RDRUM
28430	TRICHLOROETHYLENE	PAIL
28600	PERCHLOROETHYLENE, IND'L. GR.	BULK
28605	PERCHLOROETHYLENE, IND'L. GR.	RDRUM
28630	PERCHLOROETHYLENE, IND'L. GR.	PAIL
30000	DIBUTYL PHTHALATE (DBP)	BULK
30005	DIBUTYL PHTHALATE (DBP)	RDRUM
30006	DIBUTYL PHTHALATE (DBP)	NDRUM
30030	DIBUTYL PHTHALATE (DBP)	MPAIL
50000	FAST THINNER	BULK
50005	FAST THINNER-YELLOW	RDRUM
50008	FAST THINNER	PAIL
50016	FAST THINNER	15KEG
50018	FAST THINNER	RDRUM
50025	FAST THINNER	KDRUM
50030	FAST THINNER (LITHO)	MPAIL
50031	FAST THINNER	MPAIL
50032	FAST THINNER(MASTER AUTO)LITHO	MPAIL
50033	FAST THINNER-YELLOW	MPAIL
50035	FAST THINNER (BLACK)	MPAIL
50040	FAST THINNER	CS(6)
50041	FAST THINNER-YELLOW	CS(6)
50043	FAST THINNER (4-1GAL/CASE)	CS(4)
50057	FAST THINNER	REP350
50058	FAST THINNER	REP275
50500	ALL PURPOSE THINNER	BULK
50505	ALL PURPOSE THINNER	RDRUM
50525	ALL PURPOSE THINNER	KDRUM
50526	ALL PURPOSE THINNER	RDRUM
50530	ALL PURPOSE THINNER	MPAIL
50540	WASH THINNER	MCAN
51000	MID TEMP THINNER	BULK
51005	WASH THINNER (MID OFF)	RDRUM
51006	MID TEMP THINNER-YELLOW	NDRUM
51018	MID TEMP THINNER	RDRUM
51024	MID TEMP THINNER	30DRUM
51025	MID TEMP THINNER	20DRUM
51030	MID TEMP THINNER	MPAIL
51040	MID TEMP THINNER	CS(6)
51105	AME BLEND #2 55-GAL DRUM	NDRUM
51106	AME BLEND #2 50-GAL DRUM	NDRUM
51130	AME BLEND #2 #M-1988 PAIL	MPAIL
51131	AME BLEND #2 #1011 PAIL	MPAIL
51132	AME BLEND #2 #M-1939 PAIL	MPAIL
51134	AME NITROCELLULOSE THINNER	CS(6)
51141	AME BLEND #2 #1011 CASE	CS(6)
51142	AME BLEND #2 #M-1988 CASE	CS(6)
51205	VINYL SCREEN WASH	RDRUM

Products that have gone through warehouse 84 since acquisition

51800	AME BLEND #2 (BULK)	BULK
51805	BLEND #2	NDRUM
52006	WQH BLEND	NDRUM
52300	BULK TRU FORM BLEND A	BULK
52305	TRU FORM BLEND A	RDRUM
52786	WINTREX EG HVAC	RDRUM
52787	SAFE-T-THERM HYDRONIC CONCEN	NDRUM
53005	STRAIGHT ENAMEL REDUCER	RDRUM
53030	STRAIGHT ENAMEL REDUCER	MPAIL
53040	STRAIGHT ENAMEL REDUCER	MCAN
53200	FAST ACRYLIC REDUCER	BULK
53225	FAST ACRYLIC REDUCER	KDRUM
53230	FAST ACRYLIC REDUCER	MPAIL
53240	FAST ACRYLIC REDUCER	CS(6)
53300	SYNTHETIC ENAMEL REDUCE	BULK
53305	SYNTHETIC ENAMEL REDUCE	RDRUM
53330	SYNTHETIC ENAMEL REDUCE	MPAIL
53400	MIDTEMP ACRYLIC REDUCER BULK	BULK
53405	MIDTEMP ACRYLIC REDUCER	RDRUM
53425	MIDTEMP ACRYLIC REDUCER	KDRUM
53430	MIDTEMP ACRYLIC REDUCER	MPAIL
53440	MIDTEMP ACRYLIC REDUCER	CS(6)
54005	N-BUTYL ACETATE/BUTANOL BLEND	RDRUM
54006	CARNEGIE RETARDER	RDRUM
55400	AME RETARDER # 2	BULK
55500	P.N.T. 90 THINNER	BULK
55540	P.N.T. 90 THINNER	CS(6)
55545	P.N.T. 90 THINNER	RDRUM
56000	SFP URETHANE THINNER	BULK
56005	SFP URETHANE THINNER	RDRUM
56105	AJAX 845 URETHANE THINNER	RDRUM
57005	WAX OIL & GREASE REMOVER	RDRUM
57030	WAX OIL & GREASE REMOVER	MPAIL
57040	WAX OIL & GREASE REMOVER	MCAN
59004	BULK TOP GUN SPRAY GUN CLEANER	BULK
59005	TOP GUN SPRAY GUN CLEANER	RDRUM
59020	TOP GUN SPRAY GUN CLEANER	KDRUM
59030	TOP GUN SPRAY GUN CLEANER	MPAIL
59102	PREMIUM SPRAY GUN CLEANER	CS(06)
63703	PAH-NOL UNIVERSAL ANTIFREEZE	CS(6)
65306	NB SPECIAL B & R WASH	NDRUM
65406	WAYNE MRC WASH	NDRUM
65606	WAYNE DULLIT B & R WASH	NDRUM
66000	BULK SLOW ALCOHOL SOLVENT	BULK
66005	SLOW ALCOHOL SOLVENT	RDRUM
66400	BULK FAST ALCOHOL SOLVENT	BULK
66405	FAST ALCOHOL SOLVENT	RDRUM
67000	OMEGA ALCOHOL BLEND	BULK
67005	OMEGA ALCOHOL BLEND	RDRUM
68005	ALFALIN FORMULA	DRUM
68007	ALFALIN FORMULA	BULK
68008	ALFALIN FORMULA	MPAIL
68010	BULK DEVELOPER B FORMULA	BULK

Products that have gone through warehouse 84 since acquisition

68011	DEVELOPER B FORMULA	MPAIL
69006	EKCO GLACO GLAZE THINNING SOLV	NDRUM
19830		
350072	PENCOOL NFC-2088 NR FIL	CS(12)
350272	PENCOOL NFC-2089 NR FIL	CS(12)
350472	PENCOOL NFC-2090 NR FIL	CS(12)
351807	PENCOOL 3000	FDRUM
351832	PENCOOL 3000	FFAIL
351843	PENCOOL MAX POW-R PLUS	CS(12)
351879	PENCOOL 3000 (HALF GAL)	CS(06)
351881	PENCOOL 3000 (PINTS)	CS(12)
352032	PENCOOL 2000	FFAIL
352072	PENCOOL NFC-2091 NR FIL	CS(12)
352079	PENCOOL 2000	CS(06)
352081	PENCOOL 2000	CS(12)
352479	PENCOOL 2001	CS(06)
352480	PENCOOL FLEET POW-R (QUART)	CS(12)
352481	PENCOOL FLEET POW-R (PAIL)	FFAIL
352695	PENRAY 2015 TWINPAC	EACH
352809	PENRAY WINTER POW-R PLUS	FDRUM
352832	PENRAY WINTER POW-R PLUS	FFAIL
352881	PENRAY WINTER POW-R PLUS	CS(24)
353080	PENRAY WINTERTHAW	CS(12)
353281	PENRAY FUEL-PREP 1000	CS(24)
353432	PENRAY FUEL-PREP 2012	FFAIL
354101	PENRAY TS-100 CASE	CS(12)
354102	PENRAY TS-100 BOTTLE (50/BTL)	EACH
354104	PENRAY PTK-103 CASE(10/BOX)	CS
354105	PENRAY PTK-103 EACH (1 BOTTLE)	EACH
354107	PENRAY TS-102 BOTTLE (10/BTL)	OTHER
401880	J-2032H JETGO HGRAM GAS	CS(06)
401881	J-226 SMOKE NO MORE	CS(12)
403283	J-261-5 COLD FLOW 105 DIESEL	MPAIL
404206	J-311-55 PWR STRG FLUID	NDRUM
409430	J-362 BRAKE PARTS CLNR	MPAIL
409606	J-363 BRAKE PARTS CLNR	NDRUM
410093		
422242	JG-44 W/W PREMIX -20 1G	CS(6)
422542	BLUE-GOO (6/1GAL) COLOR	CS(6)
426631	J-606 DOT 3 BRAKE FLUID (PAIL)	MPAIL
426808	J-640-05 DOT 4 BRAKE FLUID	MPAIL
483702	PC#10132 POWER STRG FLD 32OZ	CS(12)
483703	PC#11032 T-FLD & SEALER 32OZ	CS(12)
483706	PC#13032 ENGINE TREATMENT 32OZ	CS(6)
483707	PC#13212 ENGN STOPPLEAK 13.5OZ	CS(12)
483713	PC#00950 BUG & TAR AEROSOL	CS(12)
483714	PC#00400 RUBBERIZED UNDERCOAT	CS(12)
483715	PC#00900 SILICONE AEROSOL	CS(12)
483717	PC#00080 PS LEAK STOPPER &COND	CS(6)
483724	PC#10012 DOT3 BRAKE FLUID 12OZ	CS(24)
483727	PC#20132 GAS TREATMENT 32 OZ.	CS(6)
483728	PC#20232 FUEL INJ CLNR 32 OZ.	CS(6)
483729	PC#20032 CARB&FUEL INJ 32 OZ.	CS(6)

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483730	PC#00760 TIRE CLN/SHINE 200Z	CS(12)
483731	PC#11000 PROTECTANT 10 OZ.	CS(12)
483734	PC#00980 ENGINE CLEANER	CS(12)
483735	PC#00800 GLASS CLNR W/ ANTIFOG	CS(12)
500100	INKSOLV SOLVENT 6193 200 PROOF	BULK
500105	INKSOLV SOLVENT 6193 200 PROOF	RDRUM
500107	INKSOLV SOLVENT 6193 200 PROOF	30DRUM
500130	INKSOLV SOLVENT 6193 200 PROOF	PAIL
500300	DO NOT USE (SEE 11000)	BULK
500305	DO NOT USE (SEE 12005)	RDRUM
500330	DO NOT USE (SEE 11030)	PAIL
500405	DO NOT USE (SEE 18205)	NDRUM
500500	N-PROPANOL	BULK
500505	N-PROPANOL	RDRUM
500506	N-PROPANOL	NDRUM
500507	N-PROPANOL	30DRUM
500530	N-PROPANOL	PAIL
500550	MARLOW LAC THINNER 80/20 FAST	BULK
500557	N-PROPANOL	REP275
500558	MARLOW LAC THINNER 80/20 FAST	REP275
500600	BUTYL CELLOSOLVE	BULK
500605	HEXANES, ACETONE	RDRUM
500700	ISOPHORONE	BULK
500705	AFS BLEND #2	RDRUM
500730	ISOPHORONE	PAIL
500805	THINNER H-750	RDRUM
500807	THINNER H-750	30DRUM
500905	BLEND T-311	RDRUM
501005	BLEND MHT	RDRUM
501105	DO NOT USE, SEE 2005	RDRUM
501200	SECONDARY BUTANOL	BULK
501205	SECONDARY BUTANOL	DRUM
501305	MINERAL SPIRITS REGULAR BLEND	RDRUM
501307	MINERAL SPIRITS REGULAR BLEND	30DRUM
501405	JAYLINE LACQUER THIN #83	30DRUM
501505	METROPOLITAN SLOW	RDRUM
501558	LALLYPAK SLOW 90/10	REP275
501605	LACQUER THINNER 40-H	RDRUM
501607	THINNER 40-H	30DRUM
501705	METRO 90-10	RDRUM
501805	POLYWORKS BLEND 90-10	RDRUM
501905	VINYL WASH JKK-T	RDRUM
501930	VINYL WASH JKK-T	PAIL
502005	LACQUER THINNER M248	RDRUM
502030	LACQUER THINNER M248	PAIL
502105	BLEND 56-56	RDRUM
502200	LACQUER THINNER INP-75	BULK
502305	DO NOT USE (see 509507)	30DRUM
502405	AT WASH	RDRUM
502407	AT WASH	30DRUM
502430	AT WASH	MPAIL
502505	LACQUER THINNER MA	RDRUM
502605	LACQUER THINNER TA-75	RDRUM

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502705	THINNER DA	RDRUM
502805	LACQUER THINNER A-10	RDRUM
502905	LACQUER THINNER #55	RDRUM
502907	LACQUER THINNER #55	30DRUM
502930	LACQUER THINNER #55	PAIL
503005	SCREEN WASH 2525	RDRUM
503030	SCREEN WASH 2525	PAIL
503105	BLEND 3379	RDRUM
503205	STI 200	RDRUM
503305	THINNER HX-T	RDRUM
503307	THINNER HX-T	30DRUM
503405	THINNER 121-H	RDRUM
503430	THINNER 121-H	30DRUM
503505	SCREEN WASH X-65	RDRUM
503507	SCREEN WASH X-65	30DRUM
503605	ELCO FAST BLANKET WASH	RDRUM
503607	ELCO FAST BLANKET WASH	30DRUM
503630	ELCO FAST BLANKET WASH	PAIL
503705	PLASTISOL REMOVER	RDRUM
503707	PLASTISOL REMOVER	NDRUM
503805	LACQUER THINNER TS2M	RDRUM
503905	ARISTON X-30	RDRUM
504007	BLANKET & ROLLER WASH #22	30DRUM
504105	WALNUT PACKAGING BLEND	RDRUM
504205	UNITED SCREEN WASH	RDRUM
504305	LACQUER THINNER #83	RDRUM
504307	LACQUER THINNER #83	30DRUM
504405	LACQUER THINNER SP	RDRUM
504505	FILM CLEANING MIX	RDRUM
504507	FILM CLEANING MIX	30DRUM
504605	AE-1 BLEND	RDRUM
504705	SOLVENT E-138	RDRUM
504805	BG BLEND	RDRUM
504905	SCREEN WASH X-45	RDRUM
505100	EXCELSIOR SLOW 90/10	BULK
505105	EXCELSIOR SLOW 90/10	RDRUM
505205	LACQUER THINNER S-85	RDRUM
505305	LACQUER THINNER M-1500	RDRUM
505307	LACQUER THINNER M-1500	30DRUM
505405	SCREEN WASH X-40	RDRUM
505407	SCREEN WASH X-40	30DRUM
505505	LACQUER THINNER AE-1	RDRUM
505605	SCOTT BLANKET & ROLLER WASH 22	RDRUM
505705	IMPACT BLEND #1	RDRUM
505707	SCREEN WASH 5000X	30DRUM
505805	LACQUER THINNER #14	RDRUM
505900	PM 6118 INK SOLVENT 200 PROOF	BULK
505905	N-METHYL PYRROLIDONE	RDRUM
505930	N-METHYL PYRROLIDONE	PAIL
506105	EXCELSIOR PC PROCESS BLEND	RDRUM
506205	SUPER FAST BLANKET & ROLLER	RDRUM
506305	PVC THINNER	RDRUM
506405	METER ROLLER WASH H-45	RDRUM

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506407	METER ROLLER WASH H-45	30DRUM
506430	METER ROLLER WASH H-45	PAIL
506505	LACQUER THINNER M-10	RDRUM
506605	ADM BLEND #50	RDRUM
506705	LACQUER THINNER T-5000	RDRUM
506805	SCREEN WASH T-3780	RDRUM
506905	VINYL WASH M	RDRUM
507005	BLANKET & ROLLER WASH PC704	RDRUM
507007	BLANKET & ROLLER WASH PC-704	30DRUM
507030	BLANKET & ROLLER WASH PC-704	MPAIL
507100	D.A.L. THINNER	BULK
507205	GLYCOL ETHER EE	RDRUM
507230	GLYCOL ETHER EE	PAIL
507305	SCREEN WASH HC	RDRUM
508000	GLYCERINE 96% USP NATURAL	BULK
508005	GLYCERINE 96% USP NATURAL	RDRUM
508105	JOSH LACQUER THINNER M248	RDRUM
508205	BLEND AV-15	RDRUM
508207	BLEND AV-15	30DRUM
508305	MULTITONE 55X BLEND	RDRUM
508307	MULTITONE 55X BLEND	30DRUM
508405	BLANKET & ROLLER WASH III	RDRUM
509004	GLYCERINE, USP 99.5%	FDRUM
509030	GLYCERINE, USP 99.5%	PL
509105	LACQUER THINNER 777	RDRUM
509158	LACQUER THINNER 777	REP275
509405	BLANKET & ROLLER WASH V-30	RDRUM
509507	METAL WASH #3	30DRUM
509600	EASTMAN EEP SOLVENT	BULK
509605	EASTMAN EEP SOLVENT	DRUM
509700	GLYCOL ETHER EP	BULK
509705	GLYCOL ETHER EP	RDRUM
509707	GLYCOL ETHER EP	30DRUM
509730	GLYCOL ETHER EP	PAIL
509900	METHANOL NF GRADE	BULK
509905	METHANOL NF GRADE	NDRUM
509930	METHANOL NF GRADE	MPAIL
510093	J-367 NON-CHLOR BRAKE PARTS CL	RDRUM
510099	PUMP PLASTIC HANDPUMP	PUMP
510999	PUMP METAL HANDPUMP	PUMP
511100	EXCELSIOR FAST	BULK
511105	EXCELSIOR FAST	RDRUM
512105	RELIABLE BLEND 637	RDRUM
512158	RELIABLE BLEND 637	REP275
513105	ULTRA PRINTING BLEND	RDRUM
513205	ULTRA PRINTING BLEND #80	RDRUM
513305	ULTRA PROCESS #15	RDRUM
513558	ULTRA PRINTING BLEND	REP275
513559	ULTRA PRINTING BLEND	REP
514105	MARK-TEX T-525 FAST THINNER	RDRUM
515105	SCREEN WASH #80	RDRUM
515107	SCREEN WASH #80	30DRUM
515205	SCREEN WASH	RDRUM

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516105	BUTYL CARBITOL	RDRUM
517000	PROPYLENE GLYCOL USP	BULK
517105	PROPYLENE GLYCOL USP	NDRUM
517130	PROPYLENE GLYCOL USP	PAIL
517158	PROPYLENE GLYCOL USP	TOTE
517830	ISOBUTYL ACETATE 99%	PAIL
518105	VINYL WASH THINNER	RDRUM
519100	DIBASIC ESTERS (DBE)	BULK
519105	DIBASIC ESTERS (DBE)	RDRUM
519130	DIBASIC ESTERS (DBE)	MPAIL
520100	DIETHYL PHTHALATE	BULK
520105	DIETHYL PHTHALATE	RDRUM
520130	DIETHYL PHTHALATE	MPAIL
520200	DIOCTYL PHTHALATE (DOP)	BULK
520205	DIOCTYL PHTHALATE (DOP)	RDRUM
520206	DIOCTYL PHTHALATE (DOP)	NDRUM
520300	DIPROPYLENE GLYCOL	BULK
520305	DIPROPYLENE GLYCOL	RDRUM
520307	DIPROPYLENE GLYCOL	30DRUM
520330	DIPROPYLENE GLYCOL	MPAIL
520405	LACTOL SPIRITS	RDRUM
520505	DO NOT USE - SEE 2605	DRUM
520600	PM4082(SP INDUST'L SOLV.)200PR	BULK
520605	PM4082(SP INDUST'L SOLV.)200PR	RDRUM
520700	PM4085(SP INDUST'L SOLV.)190PR	BULK
520705	PM4085(SP INDUST'L SOLV.)190PR	RDRUM
520758	PM4085(SP INDUST'L SOLV)190 PR	REP275
520805	DO NOT USE. SEE EASTMAN EP	RDRUM
520900	SUPER HI FLASH	BULK
521000	METHYL PROPASOL	BULK
521100	PROPYLENE GLYCOL ETHER PM	BULK
521105	PROPYLENE GLYCOL ETHER PM	RDRUM
521107	PROPYLENE GLYCOL ETHER PM	30DRUM
521130	PROPYLENE GLYCOL ETHER PM	PAIL
521200	ISOPROPANOL 99% USP	BULK
521205	ISOPROPANOL 99% USP	NDRUM
521207	ISOPROPANOL 99% USP	30DRUM
521305	PERCHLOROETHYLENE VAPOR DEGR.	FDRUM
521400	ISOBUTYL ISOBUTYRATE	BULK
521405	ISOBUTYL ISOBUTYRATE	DRUM
521430	ISOBUTYL ISOBUTYRATE	PAIL
521505	HEXYLENE GLYCOL	RDRUM
521530	HEXYLENE GLYCOL	PAIL
522105	ARCOSOLV PNB	RDRUM
522205	SHELLSOL D60	DRUM
522305	2-ETHYLHEXANOL	RDRUM
522330	2-ETHYLHEXANOL	MPAIL
522405	TRIETHANOLAMINE 99%	DRUM
522505	GLYCOL ETHER EE ACETATE	DRUM
522600	PRIMARY AMYL ACETATE	BULK
522605	PRIMARY AMYL ACETATE	DRUM
522705	GLYCOL ETHER EB ACETATE	DRUM
522730	GLYCOL ETHER EB ACETATE	PAIL

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522805	ISOPHORONE	DRUM
522900	CYCLOHEXANE	BULK
522905	CYCLOHEXANE	RDRUM
523004	CARBOWAX PEG 200	FDRUM
523104	CARBOWAX PEG 400	FDRUM
523204	CARBOWAX PEG 600	FDRUM
523304	CARBOWAX PEG 540 BLEND	FDRUM
523305	CARBOWAX PEG 540 BLEND	RDRUM
523404	CARBOWAX PEG 540 SENTRY GRADE	RDRUM
523464	CARBOWAX PEG 3350 NF POWDER	BAG
523564	CARBOWAX PEG 8000 POWDER	BAG
523664	CARBOWAX PEG 8000 FLAKE	BAG
523764	CARBOWAX 3350 POWDER	BAG
523800	PM 3224 PROP. SOLVENT 190 PR.	BULK
523805	PM 3224 PROP. SOLVENT 190 PR.	DRUM
523830	PM3224 PROP. SOLV. 190 PROOF	PAIL
523905	TRIETHANOLAMINE 85%	DRUM
524000	GLYCOL ETHER DE (LOW GRAVITY)	BULK
524005	GLYCOL ETHER DE (LOW GRAVITY)	DRUM
524200	D-LIMONENE	BULK
524204	D-LIMONENE	FDRUM
524230	D-LIMONENE	MPAIL
524305	METHYLENE CHLORIDE NF GRADE	NDRUM
524330	METHYLENE CHLORIDE NF GRADE	PAIL
524458	LACQUER THINNER NA-46	TOTE
524505	LACQUER THINNER H.T.A.	RDRUM
524507	LACQUER THINNER H.T.A	30DRUM
524605	BLANKET & ROLLER WASH TV-10	RDRUM
524705	TYPEWASH AHT	RDRUM
524800	GLYCOL ETHER DB	BULK
524805	GLYCOL ETHER DB	RDRUM
524807	GLYCOL ETHER DB	30DRUM
524830	GLYCOL ETHER DB	PAIL
524858	GLYCOL ETHER DB	TOTE
524905	LACQUER THINNER 711	RDRUM
525005	BLANKET & ROLLER WASH #30	RDRUM
525030	BLANKET & ROLLER WASH #30	MPAIL
525105	BLANKET & ROLLER WASH I-20	RDRUM
525205	DO NOT USE - SEE 528305	RDRUM
525305	SCREEN WASH 700	RDRUM
525307	SCREEN WASH 700	30DRUM
525400	DIPROPYLENE GLYCOL FRAG. GRADE	BULK
525405	DIPROPYLENE GLYCOL FRAG. GRADE	NDRUM
525406	DO NOT USE - USE 525405	NDRUM
525407	DIPROPYLENE GLYCOL FRAG. GRADE	30DRUM
525458	DIPROPYLENE GLYCOL FRAG. GRADE	REP275
525505	BLEND NO. 35	RDRUM
525605	SOIL BLEND	RDRUM
525705	LACQUER THINNER TAM	RDRUM
525805	THINNER XEB	RDRUM
525905	PROTECH BLEND	RDRUM
526005	BLEND 95-5	RDRUM
526105	THINNER 50-H	RDRUM

Products that have gone through warehouse 84 since acquisition

526107	THINNER H-50	30DRUM
526205	LACQUER THINNER X-45	RDRUM
526305	BLANKET & ROLLER WASH 2200	RDRUM
526405	BLANKET & ROLLER WASH PC-66S	RDRUM
526507	LACQUER THINNER L-20	30DRUM
526604	CARBOWAX PEG 400 Sentry Grade	FDRUM
526704	ETHYL LACTATE, FCC	FDRUM
526804	ISOPROPYL MYRISTATE	FDRUM
526905	LACQUER THINNER SC-100	RDRUM
526907	LACQUER THINNER SC-100	30DRUM
527000	ACETONE NF USP GRADE	BULK
527005	ACETONE NF USP GRADE	NDRUM
527105	LACQUER THINNER T-700	RDRUM
527107	LACQUER THINNER T-700	30DRUM
527205	CARCI WASH	RDRUM
527305	BLANKET & ROLLER WASH NS-60	RDRUM
527407	CLEAN FAST TYPEWASH	30DRUM
527430	CLEAN FAST TYPEWASH	MPAIL
527505	OPS SOLVENT	RDRUM
527507	PB BLEND	PAUL
527558	OPS SOLVENT	REP275
527559	OPS SOLVENT	ATP315
527605	THINNER T-3000	RDRUM
527607	SCREEN WASH 4000	30DRUM
527705	BLEND E-025	RDRUM
527805	PRINTAPE SPECIAL	RDRUM
527830	PRINTAPE SPECIAL	PAUL
527905	LACQUER THINNER M-63	RDRUM
527907	LACQUER THINNER M-63	RDRUM
528030	STYRENE SEAL	PAUL
528130	THINNER 13-T	PAUL
528205	ULTRA X-70	RDRUM
528300	REPLACEMENT EE BLEND	BULK
528305	REPLACEMENT EE BLEND	RDRUM
528405	HA BLEND	RDRUM
528430	PRESS CLEAN 700	PAUL
528530	TYPEWASH AHT	PAUL
528558	REPLACEMENT EE BLEND	TOTE
528605	LACQUER THINNER X-15	RDRUM
528630	BLANKET & ROLLER WASH 2200	30DRUM
528705	RELIABLE SCREEN WASH	RDRUM
528805	SCREEN WASH M-7	RDRUM
528905	EM ALCOHOL BLEND	RDRUM
529005	LACQUER THINNER V-1700	RDRUM
529105	LUNN BLEND #2	RDRUM
529205	LACQUER THINNER L-20	RDRUM
529300	CDA 19 200 PROOF	BULK
529305	CDA 19 200 PROOF	NDRUM
529405	WEB WASH CP	RDRUM
529505	ARISTON SCREEN CLEAN	RDRUM
529605	AFS THINNER TM	RDRUM
529705	D.V.C. SCREEN WASH	RDRUM
529805	FINEST MARKING BLEND	RDRUM

Products that have gone through warehouse 84 since acquisition

529905	LACQUER THINNER HI-TECH PP	RDRUM
530005	BLEND EA	30DRUM
530030	BLEND EA	MPAIL
530107	BLEND PNP-O	30DRUM
530130	BLEND PNP-O	MPAIL
530200	PROPYLENE GLYCOL ETHER PNP	BULK
530204	PROPYLENE GLYCOL ETHER PNP	FDRUM
530205	PROPYLENE GLYCOL ETHER PNP	DRUM
530207	THINNER V-1800	30DRUM
530230	GLYCOL ETHER PNP	PAIL
530305	PBR BLEND	RDRUM
530405	VINYL REDUCER 1987	RDRUM
530505	BLANKET & ROLLER WASH #22	RDRUM
530604	CARBOWAX 8000 POWDER, NF,FCC	FDRUM
530605	SCREEN WASH 4000	RDRUM
530700	TETRAHYDROFURAN (THF)	BULK
530705	TETRAHYDROFURAN (THF)	DRUM
530730	TETRAHYDROFURAN (THF)	PAIL
530758	TETRAHYDROFURAN (THF)	TOTE
530804	METHYL FORMCEL 55%	FDRUM
530907	LACQUER THINNER B-10	30DRUM
540005	BLANKET & ROLLER WASH N-37	RDRUM
540030	BLANKET & ROLLER WASH N-37	PAIL
540100	CRAIG WASH 900-H	BULK
540105	CRAIG WASH 900-H	RDRUM
540205	BLEND V-50	RDRUM
540207	BLEND V-50	30DRUM
540230	BLEND V50	PAIL
540305	SCREEN WASH M	RDRUM
540400	LANOGENE (LANOLIN)	BULK
540404	LANOGENE (LANOLIN)	FDRUM
540405	VINYL RETARDER 5500	30DRUM
540430	LANOGENE (LANOLIN)	PAIL
540500	PM4078(SP INDUST'L SOLV.)190PR	BULK
540505	PM4078(SP INDUST'L SOLV.)190PR	DRUM
540605	SPECIAL BLEND 3911	RDRUM
540705	LACQUER THINNER RT-9731	RDRUM
540730	LACQUER THINNER RT-9731	PAIL
540805	INX BLEND #3	RDRUM
540905	INX BLEND #2	RDRUM
541005	D-1000 REDUCER	RDRUM
541105	BERGEN SCREEN WASH EXP.	RDRUM
541130	BERGEN SCREEN WASH EXP.	PAIL
541205	BLEND MC-20	30DRUM
541300	BLEND WIWB-001	BULK
541305	PEACOCK BLEND	RDRUM
541400	CRAIG WASH 635-F	BULK
541405	CRAIG 635-F	RDRUM
541458	LACQUER THINNER NP-604	REP275
541505	CRAIG 700-C	RDRUM
541605	BLEND EB/PM ACETATE	RDRUM
541705	THINNER MC-DL	RDRUM
541707	THINNER MC-DL	PAIL

Products that have gone through warehouse 84 since acquisition

541730	THINNER MC-DL	DRUM
541805	DENATURED ETHYL ALCOHOL #50	30DRUM
541905	CRAIG WASH 635-G	RDRUM
542000	GLYCOL ETHER DB ACETATE	BULK
542100	BLEND FOR 900-H	BULK
542105	RPB REDUCER	RDRUM
542205	UV WASH NO. 40	RDRUM
542230	UV WASH NO. 40	PAIL
542305	BLANKET & ROLLER WASH #900	RDRUM
542307	PRESS CLEAN 70	30DRUM
542330	PRESS CLEAN 70	PAIL
542405	PEACOCK BLEND #3	RDRUM
542430	FAST THINNER	30DRUM
542505	LACQUER THINNER HT-15A	RDRUM
542605	BLANKET & ROLLER WASH J-90	RDRUM
542705	MULTITONE 41 BLEND	30DRUM
542805	ISOPROPANOL 50%	PDRUM
542830	DIOCTYL ADIPATE	MPAIL
542905	POLYPAK BLEND	RDRUM
542930	POLYPAK BLEND	PAIL
543005	BURTON SCREEN WASH EXP.	RDRUM
543030	FALCON SUPPLY #100	PAIL
543105	SOLVENT D	RDRUM
543200	METHYL n-AMYL KETONE	BULK
543205	METHYL n-AMYL KETONE	RDRUM
543230	METHYL n-AMYL KETONE	MPAIL
543305	BLEND 383 REDUCER	RDRUM
543405	ISOPROPANOL 91%	PDRUM
543505	HISHI BLEND #30	RDRUM
543605	THINNER #8 ELCO	RDRUM
543700	ETHYL ACETATE/ACETONE 90/10	BULK
543705	ETHYL ACETATE/ACETONE 90/10	RDRUM
543805	DS-1E BLEND	RDRUM
543905	GSP BLEND	NDRUM
544005	REDUCER #341	RDRUM
544105	LACQUER THINNER TH	DRUM
544107	LACQUER THINNER TH	30DRUM
544205	BLANKET & ROLLER WASH N-50	RDRUM
544305	REDUCER BLEND #84	RDRUM
544405	MINERLUBE OIL R&O	FDRUM
544505	GLYCOL ETHER TPM	DRUM
544530	GLYCOL ETHER TPM	PAIL
544605	BLANKET & ROLLER WASH 111	RDRUM
544607	BLANKET & ROLLER WASH 111	30DRUM
544705	UNITED SCREEN RETARDER	RDRUM
544805	METHYL ISOAMYL KETONE	RDRUM
544905	ETHYL ACETATE/ACETONE 50-50	RDRUM
544907	METAL WASH #4	RDRUM
545005	ZENITH NB SPECIAL B&R WASH	RDRUM
545007	ZENITH NB SPECIAL B&R WASH	3DRUM
545105	ZENITH MRC WASH	RDRUM
545107	ZENITH MRC WASH	3DRUM
545205	WHITE MINERAL OIL 70%	FDRUM

Products that have gone through warehouse 84 since acquisition

545305	EXXSOL D80	RDRUM
545405	DIISONONYL PHTHALATE	FDRUM
545607	THINNER E-90	3DRUM
545630	THINNER E-90	MPAIL
545805	SCREEN WASH 5000X	RDRUM
545830	SCREEN WASH 5000X	MPAIL
546000	TRIETHYLENE GLYCOL	BULK
546005	TRIETHYLENE GLYCOL	RDRUM
546105	SLOW 85	RDRUM
546158	SLOW 85	TOTE
546205	DIMETHYLETHANOLAMINE	FDRUM
546305	BLANKET & ROLLER WASH D-25	RDRUM
546307	BLANKET & ROLLER WASH D-25	30DRUM
546330	BLANKET & ROLLER WASH D-25	PAIL
546405	BLEND 9631	RDRUM
546505	BLEND 9637	RDRUM
546605	WASH BLEND T-925	RDRUM
546705	BLEND T-920	RDRUM
546805	BLEND 9731	RDRUM
546905	RELIABLE PROCESS BLEND	RDRUM
547005	FERMONT EPOXY REDUCER	RDRUM
547105	SCANCELLI VINYL WASH	RDRUM
547205	SCREEN WASH T-902	RDRUM
547400	SDA 39C 190 PROOF	BULK
547405	SDA 39C 190 PROOF	DRUM
547430	SDA 39C 190 PROOF	PAIL
547458	SDA 39C 190 PROOF	REP275
547500	ACTIVE SOLVENT BLEND	BULK
547505	ACTIVE SOLVENT BLEND	DRUM
547605	SMT BLEND	DRUM
547705	TRIETHYLENE TETRAMINE	FDRUM
547800	HEPTANES (LOW AROMATIC)	BULK
548005	WINDSHIELD WASHER ADDITIVE	DRUM
548105	OSM BLEND #2	DRUM
548205	OSM BLEND #3	DRUM
548405	WALNUT PROCESS #82	RDRUM
548600	EXXSOL D60 SOLVENT	BULK
548605	EXXSOL D60 SOLVENT	DRUM
548705	DIPROP. GLY. ETHER DPM ACETATE	DRUM
548730	DIPROP. GLY. ETHER DPM ACETATE	MPAIL
548905	BLANKET CLEANER NB	RDRUM
549005	BLEND T-904	RDRUM
549105	BLEND T-976	RDRUM
549205	BLEND T-971	RDRUM
549305	DENATURED ETHYL ALCOHOL #50	RDRUM
549405	CLEAN FAST TYPEWASH	RDRUM
549505	BLEND 210	RDRUM
549605	BLEND T-911	RDRUM
549705	BLEND T-912	RDRUM
549805	SDA 3A 200 PROOF	DRUM
549905	TOP CLEANER	DRUM
550030	BLEND CP-80	MPAIL
550105	INX BLEND #4	DRUM

Products that have gone through warehouse 84 since acquisition

550205	BLEND W	RDRUM
550330	BLANKET CLEANER DBDA	PAIL
550405	OMEGA EXPERIMENTAL	DRM
550500	NEW SOLVENT BLEND/161010	BULK
550600	PACKAGEMASTER 80/20 FAST	BULK
550605	PACKAGEMASTER 80/20	DRUM
550705	WINDSHIELD WASH PREMIX-30F	DRUM
550805	HISHI UCC BLEND	DRUM
550900	PM 4135(SP INDUSTRIAL SOLV)200	BULK
550906	PM 4135(SP INDUSTRIAL SOLV)200	NDRUM
551130	THINNER E-100	PAIL
551200	INKSOLV SOLVENT 6264 200 PROOF	BULK
551205	INKSOLV SOLVENT 6264 200 PROOF	DRUM
551207	INKSOLV SOLVENT 6264 200 PROOF	30DRUM
551230	INKSOLV SOLVENT 6264 200 PROOF	PAIL
551305	TRIETHYLAMINE	DRUM
551400	REAGENT ALCOHOL 200 PR PM-6255	BULK
551405	REAGENT ALCOHOL 200 PR PM-6255	NDRUM
551605	IMTECH FAST BLANKET WASH	DRM
551705	MARLOW 85/15 SLOW	REP275
552205	RECLAIMED N-METHYL PYRROLIDONE	DRUM
552405	LACTOL SPIRITS	PAIL
552500	BLEND 75/25	BULK
552505	BLEND 75/25	RDRUM
552558	BLEND 75/25	REP275
552730	SCREEN WASH SPM	PAIL
552830	SOLVENT-LAM	PAIL
552905	ISOPROPANOL 70%	PDRUM
553005	POLYPROP BLEND	DRUM
553100	SDA 40B 190 PROOF	BULK
553105	SDA 40B 190 PROOF	NDRUM
553130	SDA 40B 190 PROOF	PAIL
553200	DIOCTYL TEREPHTHALATE (DOTP)	BULK
553205	DIOCTYL TEREPHTHALATE (DOTP)	DRUM
553258	DIOCTYL TEREPHTHALATE (DOTP)	TOTE
553305	GLYCOL ETHER DE ACETATE	RDRUM
553400	TERTIARY BUTYL ALCOHOL	BULK
553405	TERTIARY BUTYL ALCOHOL	FDRUM
553500	VM & P NAPHTHA HT	BULK
553505	VM & P NAPHTHA HT	DRUM
553600	METHYL ACETATE	BULK
553605	METHYL ACETATE	RDRUM
553630	METHYL ACETATE	PAIL
553700	TXIB PLASTICIZER	BULK
553705	TXIB PLASTICIZER	RDRUM
553706	TXIB PLASTICIZER	NDRUM
553805	GLYCOL ETHER DP	FDRUM
553905	DIETHYLETHANOLAMINE	FDRUM
554305	SOLTROL 170	DRUM
554505	GEM POLYBLEND	RDRUM
554705	ISOBUTYRIC ANHYDRIDE	FDRUM
554805	BLEND SELECTO SCREEN WASH #800	DRUM
554807	BLEND SELECTO SCREEN WASH #800	30DRUM

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554830	BLEND SELECTO SCREEN WASH #800	PAIL
554905	METHYL n-PROPYL KETONE	DRUM
555005	EXXATE 800	DRUM
555200	PM4083(SP INDUST'L SOLV.)200PR	BULK
555205	PM4083(SP INDUST'L SOLV.)200PR	PDRUM
555230	PM4083(SP INDUST'L SOLV)200 PR	PAIL
555305	BLEND T-637	RDRUM
555405	CAI PROCESS BLEND	DRUM
555500	JOSEPHSON BLEND #2	BULK
555605	1,4 BUTANE DIOL	RDRUM
555630	1,4 BUTANE DIOL	PAIL
555705	F-BLEND	RDRUM
555758	F-BLEND	REP275
555905	DIETHANOLAMINE (DEA)	FDRUM
556005	ETHYLENE DIAMINE 99% HP	FD
556107	PROCESS BLEND - 02	30DRUM
556205	BLEND D-600	RDRUM
556305	BLEND 2002	RDRUM
557205	DCF (DRY CLN FLUID) HIGH FLASH	DRUM
557500	SDA 40-2 190 PROOF	BULK
557505	SDA 40-2 190 PROOF	DRUM
557705	BLEND 8020	RDRUM
557800	FC-3283	BULK
557830	SILICONE DMF 1,000 CST	PAIL
557900	HFE-7200	BULK
558000	FC-70	BULK
558100	PUREDRY	BULK
558170	PUREDRY	DRUM
558304	DIBASIC ESTER 4	FDRUM
558405	SPECIAL HF WASH (A910)	RDRUM
601000	UV WASH (A110)	BULK
601001	UV WASH (A110)	CS(6)
601005	UV WASH (A110)	DRUM
601100	UV #8 WASH (A113)	BULK
601101	UV #8 WASH (A113)	CS(6)
601105	UV #8 WASH (A113)	DRUM
601130	UV #8 WASH (A113)	PAIL
601200	UV #83 (A115)	BULK
601201	UV #83 (A115)	CS(6)
601205	UV #83 (A115)	DRUM
601230	UV #83 (A115)	PAIL
601300	UV REL (A117)	BULK
601301	UV REL (A117)	CS(6)
601305	UV REL (A117)	DRUM
601330	UV REL (A117)	PAIL
601400	UV WASH MS (A130)	BULK
601401	UV WASH MS (A130)	CS(6)
601405	UV WASH MS (A130)	DRUM
601600	WASH UV - OXY (A132)	BULK
601605	WASH UV - OXY (A132)	DRUM
601630	WASH UV - OXY (A132)	PAIL
601700	SUPERKLENE 2DX (A207)	BULK
601705	SUPERKLENE 2DX (A207)	DRUM

Products that have gone through warehouse 84 since acquisition

601730	SUPERKLENE 2DX (A207)	PAIL
601800	SUPERKLENE 2C (A208)	BULK
601801	SUPERKLENE 2C (A208)	CS(6)
601805	SUPERKLENE 2C (A208)	DRUM
601830	SUPERKLENE 2C (A208)	PAIL
601900	SUPERKLENE 2P (A216)	BULK
601901	SUPERKLENE 2P (A216)	CS(6)
601905	SUPERKLENE 2P (A216)	DRUM
601930	SUPERKLENE 2P (A216)	PAIL
602000	SUPERKLENE 1 TC (A219)	BULK
602001	SUPERKLENE 1 TC (A219)	CS(6)
602005	SUPERKLENE 1 TC (A219)	DRUM
602030	SUPERKLENE 1 TC (A219)	PAIL
602100	SUPERKLENE 1 IC (A221)	BULK
602101	SUPERKLENE 1 IC (A221)	CS(6)
602105	SUPERKLENE 1 IC (A221)	DRUM
602107	SUPERKLENE 1 IC (A221)	DRUM
602130	SUPERKLENE 1 IC (A221)	PAIL
602158	SUPERKLENE 1 IC (A221)	TOTE
602200	SUPERKLENE 1 IC-EXEMPT (A222)	BULK
602201	SUPERKLENE 1 IC-EXEMPT (A222)	CS(6)
602205	SUPERKLENE 1 IC-EXEMPT (A222)	DRUM
602230	SUPERKLENE 1 IC-EXEMPT (A222)	PAIL
602458	ALAMO WASH (A230)	TOTE
602500	ENVIRO-KLENE 3.2 7366 (A258)	BULK
602501	ENVIRO-KLENE 3.2 7366 (A258)	CS(6)
602505	ENVIRO-KLENE 3.2 7366 (A258)	DRUM
602805	ENVIRO-KLENE 1.0 7366 (A261)	DRUM
603000	ENVIRO-KLENE N 0.1 (A264)	BULK
603005	ENVIRO-KLENE N 0.1 (A264)	DRUM
603030	ENVIRO-KLENE N 0.1 (A264)	PAIL
603200	AUTOWASH 1000 (A294)	BULK
603201	AUTOWASH 1000 (A294)	CS(6)
603205	AUTOWASH 1000 (A294)	DRUM
603230	AUTOWASH 1000 (A294)	PAIL
603300	AUTOWASH 6000 (A299)	BULK
603301	AUTOWASH 6000 (A299)	CS(6)
603305	AUTOWASH 6000 (A299)	DRUM
603330	AUTOWASH 6000 (A299)	PAIL
603405	AUTOWASH D (A303)	DRUM
603500	AUTOWASH XF (A304)	BULK
603505	AUTOWASH XF (A304)	DRUM
603530	AUTOWASH XF (A304)	PAIL
603705	AUTOWASH V (A306)	DRUM
603800	AUTOWASH X (A308)	BULK
603801	AUTOWASH X (A308)	CS(6)
603805	AUTOWASH X (A308)	DRUM
603830	AUTOWASH X (A308)	PAIL
604000	AUTOWASH MFL (A316)	BULK
604005	AUTOWASH MFL (A316)	DRUM
604030	AUTOWASH MFL (A316)	PAIL
604105	AUTOWASH DF 2 (A331)	DRUM
604300	AUTOWASH 7000 (A338)	BULK

Products that have gone through warehouse 84 since acquisition

604305	AUTOWASH 7000 (A338)	DRUM
604330	AUTOWASH 7000 (A338)	PAIL
604405	AUTOWASH 8894 (A339)	DRUM
604700	AUTOWASH 9000 (A361)	BULK
604701	AUTOWASH 9000 (A361)	CS(6)
604705	AUTOWASH 9000 (A361)	DRUM
604730	AUTOWASH 9000 (A361)	PAIL
604930	STOFFEL WASH (A371)	PAIL
605005	STOFFEL WM (A372)	DRUM
605058	STOFFEL WM (A372)	TOTE
605205	SUPERSOLV D (A403)	DRUM
605300	SUPERSOLV CR (A404)	BULK
605305	SUPERSOLV CR (A404)	DRUM
605330	SUPERSOLV CR (A404)	PAIL
605405	SUPERSOLV CRF (A405)	DRUM
605600	SUPERSOLV CRF 2 (A407)	BULK
605605	SUPERSOLV CRF 2 (A407)	DRUM
605630	SUPERSOLV CRF 2 (A407)	PAIL
605700	SUPERSOLV CRF 4 (A410)	BULK
605701	SUPERSOLV CRF 4 (A410)	CS(6)
605705	SUPERSOLV CRF 4 (A410)	DRUM
605707	SUPERSOLV CRF 4 (A410)	DRUM
605730	SUPERSOLV CRF 4 (A410)	PAIL
605800	SUPERSOLV CRF 3 (A412)	BULK
605805	SUPERSOLV CRF 3 (A412)	DRUM
605830	SUPERSOLV CRF 3 (A412)	PAIL
605900	CM WASH (A418)	BULK
605901	CM WASH (A418)	CS(6)
605905	CM WASH (A418)	DRUM
605930	CM WASH	PAIL
606100	SUPERSOLV DF2 (A424)	BULK
606105	SUPERSOLV DF2 (A424)	DRUM
606130	SUPERSOLV DF2 (A424)	PAIL
606200	LITHO CLEANER (A501)	BULK
606201	LITHO CLEANER (A501)	CS(6)
606205	LITHO CLEANER (A501)	DRUM
606305	LITHO CLEANER L (A503)	DRUM
606505	WEB WASH B (A508)	DRUM
606600	WEB WASH H (A509)	BULK
606605	WEB WASH H (A509)	DRUM
606630	WEB WASH H (A509)	PAIL
606700	LITHO CLEANER 980 F (A513)	BULK
606701	LITHO CLEANER 980 F (A513)	CS(6)
606705	LITHO CLEANER 980 F (A513)	DRUM
606730	LITHO CLEANER 980 F (A513)	PAIL
606805	OXY SHEETFED 1400 A WASH(A519)	DRUM
606900	OXY WEB WASH (A521)	BULK
606905	OXY WEB WASH (A521)	DRUM
606930	OXY WEB WASH (A521)	PAIL
607000	OXY SHEETFED WASH 1910S (A522)	BULK
607005	OXY SHEETFED WASH 1910S (A522)	DRUM
607030	OXY SHEETFED WASH 1910S (A522)	PAIL
607100	CRAFT WASH #3 (A523)	BULK

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607101	CRAFT WASH #3 (A523)	CS(6)
607158	CRAFT WASH #3 (A523)	TOTE
607200	LITHOCLEANER P (A526)	BULK
607201	LITHOCLEANER P (A526)	CS(6)
607205	LITHOCLEANER P (A526)	DRUM
607230	LITHOCLEANER P (A526)	PAIL
607305	DISSOLIN V (A601)	DRUM
607330	DISSOLIN V (A601)	PAIL
607400	BLANKET WASH #4 (A605)	BULK
607401	BLANKET WASH #4 (A605)	CS(6)
607405	BLANKET WASH #4 (A605)	DRUM
607430	BLANKET WASH #4 (A605)	PAIL
607600	DISSOLIN VF (A615)	BULK
607605	DISSOLIN VF (A615)	DRUM
607630	DISSOLIN VF (A615)	PAIL
607800	CALIFORNIA EXEMPT WASH (A618)	BULK
607805	CALIFORNIA EXEMPT WASH (A618)	DRUM
607830	CALIFORNIA EXEMPT WASH (A618)	PAIL
607900	DISSOLIN DL (A625)	BULK
607901	DISSOLIN DL (A625)	CS(6)
607930	DISSOLIN DL (A625)	PAIL
608100	POWERKLENE WM (A700)	BULK
608101	POWERKLENE WM (A700)	CS(6)
608105	POWERKLENE WM (A700)	DRUM
608130	POWERKLENE WM (A700)	PAIL
608200	POWERKLENE B (A702)	BULK
608201	POWERKLENE B (A702)	CS(6)
608205	POWERKLENE B (A702)	DRUM
608230	POWERKLENE B (A702)	PAIL
608300	POWERKLENE BE (A703)	BULK
608301	POWERKLENE BE (A703)	CS(6)
608305	POWERKLENE BE (A703)	DRUM
608400	POWERKLENE X (A705)	BULK
608405	POWERKLENE X (A705)	DRUM
608430	POWERKLENE X (A705)	PAIL
608500	POWERKLENE XF (A706)	BULK
608501	POWERKLENE XF (A706)	CS(6)
608505	POWERKLENE XF (A706)	DRUM
608530	POWERKLENE XF (A706)	PAIL
608605	POWERKLENE X PLUS (A708)	DRUM
608700	POWERKLENE XF PLUS (A709)	BULK
608705	POWERKLENE XF PLUS (A709)	DRUM
608730	POWERKLENE XF PLUS (A709)	PAIL
608800	POWERKLENE K (A710)	BULK
608805	POWERKLENE K (A710)	DRUM
608830	POWERKLENE K (A710)	PAIL
608900	POWERKLENE WM SPECIAL (A711)	BULK
608901	POWERKLENE WM SPECIAL (A711)	CS(6)
608905	POWERKLENE WM SPECIAL (A711)	DRUM
608930	POWERKLENE WM SPECIAL (A711)	PAIL
609000	POWERKLENE KF (A717)	BULK
609001	POWERKLENE KF (A717)	CS(6)
609005	POWERKLENE KF (A717)	DRUM

Products that have gone through warehouse 84 since acquisition

609030	POWERKLENE KF (A717)	PAIL
609100	POWERKLENE MAN (A719)	BULK
609105	POWERKLENE MAN (A719)	DRUM
609130	POWERKLENE MAN (A719)	PAIL
609300	BLANKET WASH SB (A724)	BULK
609301	BLANKET WASH SB (A724)	CS(6)
609400	BLANKET WASH N (A726)	BULK
609401	BLANKET WASH N (A726)	CS(6)
609405	BLANKET WASH N (A726)	DRUM
609430	BLANKET WASH N (A726)	PAIL
609700	BLANKET WASH HO (A738)	BULK
609701	BLANKET WASH HO (A738)	CS(6)
609705	BLANKET WASH HO (A738)	DRUM
609730	BLANKET WASH HO (A738)	PAIL
609800	POWERKLENE VC (A748)	BULK
609801	POWERKLENE VC (A748)	CS(6)
609805	POWERKLENE VC (A748)	DRUM
609830	POWERKLENE VC (A748)	PAIL
610000	POWERKLENE KF1 (A752)	BULK
610030	POWERKLENE KF1 (A752)	PAIL
610200	POWERKLENE UK (A766)	BULK
610201	POWERKLENE UK (A766)	CS(6)
610205	POWERKLENE UK (A766)	DRUM
610230	POWERKLENE UK (A766)	PAIL
610300	POWERKLENE C (A770)	BULK
610301	POWERKLENE C (A770)	CS(6)
610305	POWERKLENE C (A770)	DRUM
610330	POWERKLENE C (A770)	PAIL
610400	XCELLO (A801)	BULK
610401	XCELLO (A801)	CS(6)
610405	XCELLO (A801)	DRUM
610430	XCELLO (A801)	PAIL
610500	XCELLO H (A802)	BULK
610501	XCELLO H (A802)	CS(6)
610505	XCELLO H (A802)	DRUM
610530	XCELLO H (A802)	PAIL
610600	XCELLO N (A803)	BULK
610605	XCELLO N (A803)	DRUM
610630	XCELLO N (A803)	PAIL
610700	XCELLO D (A805)	BULK
610701	XCELLO D (A805)	CS(6)
610705	XCELLO D (A805)	DRUM
610730	XCELLO D (A805)	PAIL
610800	FEDEROID (A806)	BULK
610801	FEDEROID (A806)	CS(6)
610805	FEDEROID (A806)	DRUM
610830	FEDEROID (A806)	PAIL
610900	FEDEROID L (A807)	BULK
610901	FEDEROID L (A807)	CS(6)
610905	FEDEROID L (A807)	DRUM
610930	FEDEROID L (A807)	PAIL
611005	SILK SCREEN WASH HF (A815)	DRUM
611301	BACK CYLINDER CLEANER (A840)	CS(6)

Products that have gone through warehouse 84 since acquisition

611400	MPP #2 SURFACE CLEANER (A895)	BULK
611401	MPP #2 SURFACE CLEANER (A895)	CS(6)
611405	MPP #2 SURFACE CLEANER (A895)	DRUM
611500	QUICK WASH (A897)	BULK
611501	QUICK WASH (A897)	CS(6)
611505	QUICK WASH (A897)	DRUM
611530	QUICK WASH (A897)	PAIL
611600	SPEEDY (A901)	BULK
611601	SPEEDY (A901)	CS(6)
611605	SPEEDY (A901)	DRUM
611630	SPEEDY (A901)	PAIL
611700	SPECIAL SPEEDY (A902)	BULK
611701	SPECIAL SPEEDY (A902)	CS(6)
611705	SPECIAL SPEEDY (A902)	DRUM
611730	SPECIAL SPEEDY (A902)	PAIL
611805	GMG SPEEDY (A903)	DRUM
611900	PLASTIC PLATE WASH (A907)	BULK
611930	PLASTIC PLATE WASH (A907)	PAIL
612100	NEW CROSLEY SPECIAL (A914)	BULK
612101	NEW CROSLEY SPECIAL (A914)	CS(6)
612105	NEW CROSLEY SPECIAL (A914)	DRUM
612130	NEW CROSLEY SPECIAL (A914)	PAIL
612200	NUMBER MACHINE CLEANER (A915)	BULK
612201	NUMBER MACHINE CLEANER (A915)	CS(6)
612300	MPP SURFACE CLEANER (A916)	BULK
612400	MRC-F EXEMPT (A918)	BULK
612401	MRC-F EXEMPT (A918)	CS(6)
612405	MRC-F EXEMPT (A918)	DRUM
612500	MRC F-3 (A919)	BULK
612501	MRC F-3 (A919)	CS(6)
612505	MRC F-3 (A919)	DRUM
612530	MRC F-3 (A919)	PAIL
612600	FILM CLEANER (A923)	BULK
612601	FILM CLEANER (A923)	CS(6)
612605	FILM CLEANER (A923)	DRUM
612900	MRC METERING ROLL CLEAN (A931)	BULK
612901	MRC METERING ROLL CLEAN (A931)	CS(6)
612905	MRC METERING ROLL CLEAN (A931)	DRUM
612930	MRC METERING ROLL CLEAN (A931)	PAIL
613000	MRC-F2 (A938)	BULK
613001	MRC-F2 (A938)	CS(6)
613100	MRC-F (A941)	BULK
613101	MRC-F (A941)	CS(6)
613105	MRC-F (A941)	DRUM
613130	MRC-F (A941)	PAIL
613200	RUBBER REJUVENATOR (A942)	BULK
613201	RUBBER REJUVENATOR (A942)	CS(6)
613205	RUBBER REJUVENATOR (A942)	DRUM
613230	RUBBER REJUVENATOR (A942)	PAIL
613300	MRC-K (A946)	BULK
613301	MRC-K (A946)	CS(6)
613305	MRC-K (A946)	DRUM
613330	MRC-K (A946)	PAIL

Products that have gone through warehouse 84 since acquisition

613400	FILM CLEANER H (A950)	BULK
613401	FILM CLEANER H (A950)	CS(6)
613505	DYCRIL PLATE WASH (A953)	DRUM
613700	PPL WASH (A969)	BULK
613701	PPL WASH (A969)	CS(6)
613705	PPL WASH (A969)	DRUM
613900	TYPE WASH R (A983)	BULK
613901	TYPE WASH R (A983)	CS(6)
613905	TYPE WASH R (A983)	DRUM
613930	TYPE WASH R (A983)	PAIL
614000	BRYANT WASH III (A987)	BULK
614030	BRYANT WASH III (A987)	PAIL
614100	BRYANT WASH (A989)	BULK
614101	BRYANT WASH (A989)	CS(6)
614730	ACTISOLVE	PAIL
615005	ALBATROSS SUPERKLEEN S.P.I.F.	DRUM
615405	ARLACEL 186	DRUM
615505	ARLACEL 80	DRUM
615900	XTRASOLV WM (B106)	BULK
615901	XTRASOLV WM (B106)	CS(6)
615905	XTRASOLV WM (B106)	DRUM
616005	WASH BC (B114)	DRUM
616200	REPROKLENE BF7 (B210)	BULK
616230	REPROKLENE BF7 (B210)	PAIL
616300	REPROKLENE CH (B213)	BULK
616301	REPROKLENE CH (B213)	CS(6)
616330	REPROKLENE CH (B213)	PAIL
616405	REPROKLENE TM (B214)	DRUM
616500	REPROKLENE 104 (B217)	BULK
616501	REPROKLENE 104 (B217)	CS(6)
616505	REPROKLENE 104 (B217)	DRUM
616530	REPROKLENE 104 (B217)	PAIL
616600	BENZOLINE (B301)	BULK
616601	BENZOLINE (B301)	CS(6)
616605	BENZOLINE (B301)	DRUM
616630	BENZOLINE (B301)	PAIL
616700	SOLVENT (B302)	BULK
616701	SOLVENT (B302)	CS(6)
616705	SOLVENT (B302)	DRUM
616800	SPECIAL SOLVENT (B303)	BULK
616801	SPECIAL SOLVENT (B303)	CS(6)
616830	SPECIAL SOLVENT (B303)	PAIL
616900	CALIFORNIA SPECIAL WASH (B350)	BULK
616901	CALIFORNIA SPECIAL WASH (B350)	CS(6)
616905	CALIFORNIA SPECIAL WASH (B350)	DRUM
616930	CALIFORNIA SPECIAL WASH (B350)	PAIL
617000	SOLVENT H (B400)	BULK
617001	SOLVENT H (B400)	CS(6)
617005	SOLVENT H (B400)	DRUM
617030	SOLVENT H (B400)	PAIL
617105	CLASSIC 110 (B410)	DRUM
617405	XTRASOLV KF (B507)	DRUM
617500	XTRASOLV VC (B508)	BULK

Products that have gone through warehouse 84 since acquisition

617501	XTRASOLV VC (B508)	CS(6)
617530	XTRASOLV VC (B508)	PAIL
617705	PES 145 BLEND (B514)	DRUM
617800	PES 153 BLEND (B515)	BULK
617805	PES 153 BLEND (B515)	DRUM
617830	PES 153 BLEND (B515)	PAIL
618305	PES 334 (B533)	DRUM
618405	PES 345 BLEND (B534)	DRUM
618500	PES 353 BLEND (B535)	BULK
618530	PES 353 BLEND (B535)	PAIL
618605	PES 349 BLEND (B549)	DRUM
618705	PES ABW1 (B550)	DRUM
619100	RED MAGIC X (B802)	BULK
619101	RED MAGIC X (B802)	CS(6)
619105	RED MAGIC X (B802)	DRUM
619130	RED MAGIC X (B802)	PAIL
619158	RED MAGIC X (B802)	TOTE
619201	RED MAGIC X EXEMPT (B803)	CS(6)
619205	RED MAGIC X EXEMPT (B803)	DRUM
619300	BLUE MAGIC F1 (B809)	BULK
619301	BLUE MAGIC F1 (B809)	CS(6)
619400	RUBBER REVITALIZER (B815)	BULK
619401	RUBBER REVITALIZER (B815)	CS (6)
619405	RUBBER REVITALIZER (B815)	DRUM
619430	RUBBER REVITALIZER (B815)	PAIL
619500	BLUE MAGIC V (B820)	BULK
619501	BLUE MAGIC V (B820)	CS(6)
619505	BLUE MAGIC V (B820)	DRUM
619605	GRAPHIC BLANKET WASH (B821)	DRUM
620564	SUSTAINED BHT ANTIOXIDANT	BAG
621800	CALSOL 905 PROCESS OIL	BULK
621805	CALSOL 905	RDRUM
621905	CALSUDS CD-6	DRUM
622005	CALIMULSE PRS	DRUM
622105	CALSOL 610 PROCESS OIL	RDRUM
622205	CALSOFT T60/HARTOFOL 60T	DRUM
622300	CAMPING FUEL	BULK
622705	NAXAMIDE CD-231	DRUM
623205	IGEPAL CO-210 SURFACTANT	DRUM
623305	IGEPAL CO-520 SURFACTANT	DRUM
623905	C. MATTHEY CYCLO SOL 42 BLEND	DRUM
624700	DELEET POWERKLENE CONCENTRATE	BULK
624900	DELEET BLEND 9002	BULK
624905	DELEET BLEND 9002	DRUM
625300	DODECYL BENZENE SULFONIC ACID	BULK
625305	DODECYL BENZENE SULFONIC ACID	DRUM
625800	DEL LABS - NAIL POLISH REMOVER	BULK
626700	DIGESIL NC SILICONE DIGESTANT	BULK
626705	DIGESIL NC SILICONE DIGESTANT	DRUM
626730	DIGESIL NC SILICONE DIGESTANT	PAIL
627005	DIMETHYLAMINOPROPYLAMINE	DRUM
630130	YELLOW DYE (PYLUMCHROME10702)	PAIL
632400	EXXSOL D110 FLUID	BULK

Products that have gone through warehouse 84 since acquisition

632405	EXXSOL D110 FLUID	DRUM
633230	#110-456 BOUQUET FRAGRANCE	PAIL
633330	#124-340 VANILLA FRAGRANCE	PAIL
633430	#140-864 CITRUS FRAGRANCE	PAIL
633530	#142-867 ALPINE FRAGRANCE	PAIL
634105	GLACIAL ACETIC ACID	DRUM
635005	ISOBUTYRIC ACID	DRUM
635805	ISOPAR E	DRUM
635905	ISOPAR G	DRUM
636105	ISOPAR K	DRUM
636305	ISOPAR M	DRUM
636505	JEFFCOOL P205 COOLANT	DRUM
636605	JEFFCOOL P200 COOLANT	DRUM
639705	MORPHOLINE-WATER BLEND 50/50%	DRUM
640705	SURFONIC N-100	DRUM
641300	SURFONIC N-40	BULK
641305	SURFONIC N-40	DRUM
641400	SURFONIC N-60	BULK
641405	SURFONIC N-60	DRUM
641700	SURFONIC N-95	BULK
641705	SURFONIC N-95	DRUM
643405	NUTO H 32	DRUM
645130	PAIL 5 GALLON STEEL GRAY	PAIL
645230	PAIL 6 GALLON STEEL DEEET	PAIL
646700	PROPYLENE GLYCOL USP KOSHER	BULK
646705	PROPYLENE GLYCOL USP KOSHER	DRUM
646758	PROPYLENE GLYCOL USP KOSHER	TOTE
647105	PINE OIL 85%	DRUM
647805	PROPYLENE CARBONATE HP GRADE	DRUM
648405	RHODAFAC RE 610	DRUM
652095	2IN WHITE PLASTIC TRISURE SEAL	Each
653105	LOW ODOR BASED SOLVENT 529	DRUM
654305	STEOL KS-460	DRUM
654805	SURFAMIDE O	DRUM
655205	SYLFAT 9014 FATTY ACID (NIREZ)	DRUM
655305	SYLFAT FA-1 SPECIAL	DRUM
657805	TELURA 407 PROCESS OIL	DRUM
658205	TERESSTIC 150 OIL	DRUM
658605	TERESSTIC 46	DRUM
658705	TERESSTIC 68	DRUM
660705	TRANSLEX BLEND #1	DRUM
661705	UNIVIS J13 OIL	DRUM
661800	VARSL 1 NAPHTHA	BULK
661805	VARSL 1 NAPHTHA	DRUM
662305	WATER, DEIONIZED	DRUM
662705	SUPERLA WHITE OIL #21 USP	DRUM
662805	SUPERLA WHITE OIL #35 USP	DRUM
663205	SUPERLA WHITE OIL #7 NF	DRUM
663305	SUPERLA WHITE OIL #9 NF	DRUM
663430	WONDER SOLVE	PAIL
663440	WONDER SOLVE	CS(4)
663605	GLYCERINE 99.7% MIN. KOSHER	DRUM
663630	GLYCERINE 99.7% MIN. KOSHER	PAIL

Products that have gone through warehouse 84 since acquisition

663700	EVERREADY SPECIAL (A920)	BULK
663701	EVERREADY SPECIAL (A920)	CS (6)
690195	WHITE BOX FOR 1 GAL DELEET CAN	BOX
690295	1 1/4 IN. ALPHA SCREW .045 SS	EACH
690595	DRUM STEEL NEW 30 GAL.	DRUM
690695	DRUM POLYPROP. NEW.WHT 55GAL	DRUM
691295	DRUM POLYPROP. NEW BLUE TECH.	DRUM
691395	DRUM POLYPROP NEW BLUE USP	DRUM
691795	DRUM STEEL 18/20 RECON. BLUE	DRUM
692195	1 GAL. TIN CAN (BLANK) DELEET	CANS
692295	1 GALLON WHITE F-STYLE CAN	CANS
692395	1 GAL. TIN CAN FOR MRC BLEND	CANS
692495	1 GAL. TIN CAN RED MAGIC BLEND	CANS
693095	2IN WHITE PLASTIC RIEKE SEAL	Each
693195	3/4 WHT PLASTIC DRUM SEAL	Each
693295	FLEXSPOUT SEAL FS10-6-300	EACH
693595	275 GAL. PLASTIC CAGED TOTE	TOTE
693795	345 GAL. STAINLESS STEEL TOTE	TOTE
693895	350 GAL. STAINLESS STEEL TOTE	TOTE
693995	TOTE CLEANING	TOTE
694195	TOTE TESTED	TOTE
695000	MRC-UV (A955)	BULK
695001	MRC-UV (A955)	CS(6)
695030	MRC-UV (A955)	PAIL
700104	TRIACETIN, KOSHER, FOOD GRADE	FDRUM
700200	BLEND SV 1031	BULK
700205	BLEND SV 1031	DRUM
700305	DUOPAC 90	RDRUM
700700	BLANKET ROLLER WASH C	BULK
700705	BLANKET ROLLER WASH C	DRUM
700805	BLEND 326	RDRUM
701205	DUOPRIME 90	NDRUM
701905	BLEND 510	DRUM
702104	AQUA AMMONIA 29%	FDRUM
702205	BLEND 314	NDRUM
702905	CDA 19 190 PROOF	PDRUM
703100	BLEND SV 4026	BULK
703200	AS CLEANING BLEND	BULK
703258	AS CLEANING BLEND	TOTE
703304	AMP 95	FDRUM
703530	DUOPRIME 70	PAIL
703605	BLEND 128	RDRUM
703905	HOOD LACQUER THINNER #1	RDRUM
703958	HOOD LACQUER THINNER #1	TOTE
704005	BLEND 270	DRUM
704204	TRITON DF-12	FDRUM
704705	DIMETHYL PHTHALATE	DRUM
704900	BLEND L 8680	BULK
705305	BLEND 323	DRUM
705705	BLEND 263	DRUM
705805	SOLVENT C	DRUM
705905	DOWER BLEND	DRUM
706705	A-A-857B THINNER	DRUM

Products that have gone through warehouse 84 since acquisition

706805	BLEND D70	DRUM
707005	BLEND REISS THINNER	DRUM
707105	SR-99 (STAIN REDUCER)	DRUM
707205	BLEND RT 40	DRUM
707505	SPRAY GUN CLEANER BLEND	DRUM
707604	EXTENDOPLAST P	FDRUM
707704	DITRIDEDECYL PHTHALATE	FDRUM
707805	BLEND 108	DRUM
707904	DI-N-HEXYL PHTHALATE	FDRUM
708005	PW 604 A	DRUM
708205	BLEND #1	RDRUM
708505	BLEND #370	DRUM
708600	INKSOLV SOLVENT 6193 190 PROOF	BULK
708605	INKSOLV SOLVENT 6193 190 PROOF	DRUM
709105	DECOR LACQUER THINNER S	RDRUM
709306	HOUGHTON H130	NDRUM
709330	HOUGHTON H130	PAIL
709705	LACQUER THINNER	RDRUM
709730	LACQUER THINNER	PAIL
709805	BLEND FO-3008	NDRUM
710705	EURO BLEND	RDRUM
710805	THINNER #8	RDRUM
711205	HYGOLD H2000	DRUM
711500	BLEND 147	BULK
711600	BLEND 391	BULK
711704	DIISODECYL PHTHALATE	FDRUM
712005	BLEND MRC	RDRUM
712305	BLEND 371	RDRUM
712505	BLEND 560	RDRUM
712605	BLEND SR-90	RDRUM
712905	ETHYL ACETATE 99.5% NF KOSHER	NDRUM
713005	BLEND 81772 EPOXY THINNER	RDRUM
713030	BLEND 81772 EPOXY THINNER	PAIL
713205	FO 128 BLEND	NDRUM
713300	BLEND M 448 A	BULK
713404	DIBASIC ESTER 3	FDRUM
713505	BLEND 264 RUBBER RESTORER	RDRUM
713605	ODORLESS PRESS WASH A-60	RDRUM
713800	ALPHA BLEND #1	BULK
713905	BLEND 525	RDRUM
714130	BLEND 449	MPAIL
800005	DRUM 55GA BLK/WHT RECON	DRUM
800105	DRUM 55GA ANTIFREEZE RECON	DRUM
800205	DRUM 55GA BLK/BLUE RECON	DRUM
800305	DRUM 30GA BLK/WHT RECON	DRUM
800405	DRUM 55GA BLK/WHT NEW	DRUM
800505	DRUM 20GA BLK/WHT NEW	DRUM
800555	DRUM 55GA OPEN HEAD RECON	DRUM
800605	DRUM 15GA NEW DRUM	DRUM
800705	DRUM 30GA BLK/WHT NEW	NDRUM
800805	DRUM 55GA BLK/WHT NEW CLEAR	NDRUM
800905	DRUM 55GA ALL WHITE NEW	NDRUM
800985	DRUM 30GA PLASTIC POLY	DRUM

Addendum B

NJ Stack #	Certificate	Product	Tank
001	042513	Propyl Acetate	9
002	042514	Methyl Ethyl Ketone	8
003	042515	Denatured Ethyl Alcohol	1
004	042516	Aromatic 100	2
005	042517	Methyl Isobutyl Ketone	3
006	042518	Toluene	4
007	042519	Acetone	5
008	042520	Mineral Spirits	6
009	042521	Isopropanol	7
010	042522	N-Propanol	11
011	042523	Methanol	12
012	042524	Isopropanol	10
013	0068591		Drum Filling Room

Adeleandrea C

GEC Project No. 1061-1020

**SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT
FOR SOILS AND GROUNDWATER
&
SUPPLEMENT TO REMEDIAL ACTION WORKPLAN
FOR
ELCO SOLVENTS CORPORATION
30 AMOR AVENUE
CARLSTADT, BERGEN COUNTY, NEW JERSEY
ISRA Case No. E98274**

August 7, 2002

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Appendix C: Tabular Summary of Groundwater Analytical Data
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Appendix E: HRC Injection Grid Design Spreadsheet: Pilot Test & Entire Plume

CERTIFICATIONS

Per the requirements of N.J.A.C. 7:26C-1.2 et seq., any person making a submission to the Department shall include the following signatures and notarized two-part certification, for each technical submittal.

TYPE OF DOCUMENT: Remedial Investigation Report

CASE NAME: ELCO SOLVENTS CORP. CASE NUMBER: ISRA - E98274

CASE ADDRESS: 30 Amor Ave., Borough of Carlstadt, Bergen County

The following certification shall be signed by:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively, or;
3. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official.
4. For persons other than 1 through 3 above, by the person with legal responsibility for the site.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and all attached documents, and that based on my inquiries of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

Printed Name: BROCE F. Houghton Title: President

Signature: Broce F. Houghton Date: 8/2/02

Notary Signature: Deborah J. Haun Date: 8/2/02

My commission expires: July 24, 2009

1.0 INTRODUCTION

Goldman Environmental Consultants, Inc., (GEC) of Braintree, Massachusetts has been retained by Houghton Chemical Corporation (Houghton) to conduct response actions relative to historic releases of oil and/or hazardous materials (OHM) that impacted soil and groundwater at 30 Amor Avenue, Carlstadt, Bergen County, New Jersey (ISRA Case No. E98274), hereinafter the "Site"; refer to Figure 1. This report describes groundwater sampling activities conducted recently by GEC and evaluates potential remedial actions for soil and groundwater. Results of the recent groundwater investigation are provided as a supplement to GEC's *Remedial Investigation Report for Soils and Groundwater (RIR)*, dated April 12, 2002. The evaluation of remedial action alternatives provided is a supplement to the *Remedial Action Workplan (RAW)*, prepared by Hydro-Geo Corporation, dated September, 2000.

The goal of the supplemental groundwater investigation documented herein was to collect a second round of samples from GEC-1 and GEC-2 to confirm/refute the January, 2002 groundwater data and to gather additional data for use in determining whether natural attenuation of groundwater contamination is occurring in the Site aquifer. These data, along with Site data collected during prior sampling rounds, is used in developing alternatives for remediating contamination in Site groundwater. Following is a brief description of remedial investigation activities conducted in June, 2002, a summary and evaluation of the remedial investigation data for January and June, 2002, an evaluation of remedial alternatives and recommendations for Site remediation.

This RIR was prepared in accordance with the Technical Requirements for Site Remediation, N.J.A.C. 7:26E, Section 4.8, and is provided to New Jersey Department of Environmental Protection (NJDEP) in triplicate; one copy includes the entire laboratory Reduced Deliverable package and the two remaining copies include only the laboratory Data Summary sheets. Please note that historical information and a detailed description of the physical setting were provided in prior RIRs, prepared by Hydro-Geo Corporation of Belle Mead, New Jersey, and are not reiterated herein.

2.0 REMEDIAL INVESTIGATION ACTIVITIES

All field activities were conducted in accordance with guidance provided in NJDEP's *Field Sampling Procedures Manual* (1992). Groundwater samples were submitted under chain-of-custody documentation to STL Edison (STL) of Edison, New Jersey, a state-certified laboratory. Laboratory Certificates of Analysis are provided in Appendix A. Monitoring well purge data and results of physicochemical monitoring conducted during groundwater sampling are provided in Appendix B. Table 1 provides a

summary of groundwater samples collected and laboratory analyses conducted in June, 2002. Data on the construction of permanent on-Site monitoring wells is provided in Table 2. Summaries of laboratory analytical data for groundwater samples are provided in Table 3. Sampling locations are depicted on Figure 2. The work undertaken is described below.

On June 4, 2002, GEC collected groundwater samples from five existing wells: MW-1, MW-2, MW-3, GEC-1 and GEC-2. GEC was unable to sample MW-6, which was damaged at the ground surface, or MW-4, which could not be located. GEC elected not to sample MW-5 or MW-7, located outside the apparent bounds of the dissolved-phase groundwater contaminant plume originating at the rear of the Site building, in which OHM typical of the Site were absent or present at low concentrations. Samples from GEC-1 and GEC-2 were submitted to STL for laboratory analysis for volatile organic compounds (VOCs) via USEPA Method 624+10, including MTBE and n-propanol, and semi-volatile organic compounds (SVOCs) or base-neutral compounds via USEPA Method 625+15. Samples from all five wells were submitted for laboratory analysis for methane, ethane and ethane via Method 3810, and nitrate, sulfate, iron and manganese. Refer to Table 3 for a summary of groundwater analytical data and Appendix B for monitoring well purge data and physicochemical groundwater parameter readings recorded during sampling.

3.0 EVALUATION OF REMEDIAL INVESTIGATION DATA

Following is a brief description of groundwater data for sampling conducted by GEC in January and June, 2002. These data are evaluated with respect to existing data for the Site to refine the current understanding of groundwater contamination and for use in developing and screening remedial alternatives and selecting proposed remedial actions. Data for groundwater and soil samples collected prior to the June, 2002 sampling round are summarized in tables provided in Appendices C and D, respectively.

3.1 Historic Groundwater Data

Based on historic groundwater data, monitoring wells MW-1 and MW-2 located proximal to Tank Farm #1/Mixing Area (AOC-4) had the highest levels of groundwater contamination, consisting primarily of chlorinated VOCs (e.g., methylene chloride [MC], 1,1,1-trichloroethane [TCA], tetrachloroethene [PCE] and trichloroethene [TCE]) and their degradation products (e.g., cis-1,2-dichlorethene [DCE], 1,1-dichloroethane [DCA], 1,1-DCE, vinyl chloride [VC], etc.), and to a lesser extent, light-weight petroleum constituents including benzene, toluene, ethylbenzene and xylenes (BTEX). This result

was consistent with both laboratory analytical data and field screening tests of soil samples indicating that soil contamination is greatest beneath the above-ground tank farm. Lower concentrations of several of these VOCs were also detected in MW-3, and to a lesser extent in MW-4 through MW-7.

3.2 Groundwater Data: January, 2002

In January, 2002 GEC installed three monitoring wells (GEC-1, GEC-2 and GEC-3) to further delineate the horizontal and vertical extent of groundwater contamination. GEC-1 and GEC-2 were installed in area of concern #2 (AOC-2), which is located adjacent to AOC-4, near the northwest corner of the Site building. GEC-3 was installed northwest of AOC-2 near the property boundary. Laboratory analysis of groundwater samples collected in January, 2002 from GEC-1 and GEC-2 evidenced higher levels of both chlorinated VOCs and BTEX than detected in other on-Site wells. Groundwater contamination does not appear to be migrating west-northwest of the source area as evidenced by laboratory analytical data for the sample from GEC-3, installed near the railroad tracks, which had only trace concentrations of a few chlorinated VOCs present at or near sample quantitation limits and below groundwater quality standards.

GEC-2 was installed at the northern end of the western truck loading/unloading pad to provide information on groundwater contaminant levels in AOC-2. Data for GEC-2 evidence the highest levels of VOC groundwater contamination detected on-Site to date and suggest the potential presence of free-phase chlorinated solvents in groundwater. These data for GEC-2, a water table well, are particularly striking when compared to data for MW-1, another water table well that is located only 30 feet away. Despite the difference in contaminant concentrations between these wells, the particular VOCs detected are substantially the same and include primarily chlorinated solvents and their related breakdown products, mentioned previously. In addition, diethylphthalate, an SVOC, was detected in GEC-2 at an elevated concentration. Recent data for MW-1 and GEC-2 suggest that groundwater contamination near the northwest corner of the Site building may be the result of spills at the western truck loading/unloading pad, rather than the Tank Farm#1/Mixing Area.

GEC-1 was installed adjacent to MW-1 to determine if heavy, chlorinated solvents in groundwater had migrated downward through the silt and clay. GEC proposed installing this well in the first water encountered beneath the clay. In the soil sample from 33 to 35 feet below grade, GEC encountered equal parts clay and gravel, which was a departure from the overlying 15 to 20 feet of only clay, and elected to install the well at this depth. As discussed previously, laboratory analysis of soil samples from

this boring location showed no contamination at 24 to 26 feet below grade and, with the exception of methylene chloride, only low concentrations of VOCs in the soil sample collected 33 to 35 feet below grade. Since soil samples collected within the water table often exhibit evidence of contamination that is attributable to groundwater, the soil data suggested that there was little groundwater contamination at depth. However, laboratory analysis of groundwater from GEC-1 showed otherwise. The chlorinated solvent and BTEX VOCs detected in MW-1 were also present in the sample from GEC-1, but at higher concentrations.

As a codicil to the evaluation of groundwater data, it is also noted that elevated tentatively identified compound (TIC) readings were reported for VOCs and SVOCs in MW-1, GEC-1 and GEC-2. Apparently, VOC TICs consist primarily of 4-methyl-2-pentanone and to a lesser extent 3,3,5-trimethylcyclohexanone. SVOC TICs consist primarily of 3,3,5-trimethylcyclohexanone and 3,3,5-trimethylcyclohexanol, a chemical intermediary in the manufacture the former compound. The remainder of VOC and SVOC TICs consist of various ketones and unknown alcohols, respectively.

Data for groundwater samples collected from MW-1 and MW-2 between July 1998 and January 2002 document a general trend toward decreasing concentrations of chlorinated solvents, strongly suggesting that natural attenuation of groundwater contamination is occurring at the Site, although several VOCs are still present at concentrations greater than New Jersey Groundwater Quality Standards (GWQS).

3.3 Groundwater Data: June, 2002

On June 4, 2002, GEC re-sampled GEC-1 and GEC-2 to confirm laboratory analytical data for the January, 2002 sampling round. Analysis of groundwater samples collected from these two wells in June yielded similar results to the January sampling round, namely elevated concentrations of chlorinated VOCs and BTEX compounds and similar TICs. Although the concentrations of individual analytes detected in GEC-1 varied between the two sampling rounds, the sum both of the total confident and estimated concentrations of VOCs was consistent. However, contaminant concentrations detected in GEC-2 were roughly one-half of previously detected concentrations. These results confirm results of the January, 2002 sampling round, which indicate that the portion of the aquifer at GEC-1 and GEC-2, located proximal to the northwestern corner of the Site building, has the highest apparent levels of groundwater contamination. Refer to Table 4 for a comparison of groundwater data for samples collected between 1998 and 2002.

Groundwater samples from four wells (GEC-1, GEC-2, MW-1, and MW-2) located within the apparent bounds of the dissolved-phase contaminant plume, which is limited to the immediate vicinity of the source area(s), i.e., the Tank Farm #1/Mixing Area (AOC-4) and the western truck loading/unloading pad (AOC-2), and MW-3 located downgradient/cross-gradient of the source area, were analyzed for methane, ethane, ethane, nitrate, sulfate, iron and manganese. These data were evaluated in conjunction with the physicochemical groundwater parameters, documented in Appendix B, in determining whether anaerobic biodegradation processes are occurring in the Site aquifer.

GEC followed the bioattenuation screening process described in USEPA's *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater* (1998) to assess the potential for natural attenuation via anaerobic biodegradation of chlorinated VOCs in the Site aquifer. This method relies on the fact that anaerobic biodegradation will cause predictable changes in groundwater chemistry. In the screening process, each parameter for samples collected within the source area is scored and assigned a weighted point value ranging between -3 and 3. If the score totals 15 or more points, it is likely that biodegradation is occurring. A total score of more than 20 points is considered strong evidence for anaerobic biodegradation of chlorinated VOCs. The total score for the Houghton Site is 22; refer to the table below.

Analytes	Concentration in Most Contaminated Zone ¹	Points Awarded
Dissolved Oxygen	2.36 mg/L	0
Nitrate	Not Detected	2
Iron	527 mg/L	3
Sulfate	13.7 mg/L	2
Methane	4.43 mg/L	3
Ethene/Ethane	Not Detected	0
ORP	-103.9 mV	2
pH	6.62	0
Temperature	17.8 deg. Celsius	0
BTEX	2.96 mg/L	2
cis-DCE ²	7.67 mg/L	2
1,1-DCA ²	2.95 mg/L	2
VC ²	0.73 mg/L	2
chloroethane ²	2.09 mg/L	2
TOTAL POINTS		22

- 1) Average concentration detected via field screening in June, 2002 during well purging activities at GEC-2, MW-1 and MW-2 or via laboratory analysis of groundwater samples collected from GEC-1, GEC-2, MW-1 and MW-2 in January or June, 2002, as appropriate.
- 2) This compound is likely a product of anaerobic biodegradation (i.e., a daughter product) of the released material.

Based on the foregoing, there is strong evidence that anaerobic biodegradation of chlorinated VOCs is occurring at the Site. The results of the bioattenuation screening process confirm other laboratory analytical data that document a general trend toward decreasing concentrations of chlorinated solvents in groundwater.

4.0 CONCLUSIONS ON REMEDIAL INVESTIGATION

As stated in Section 1.0 of this report, the goal of supplemental Site investigation activities described herein was two-fold: 1) to confirm/refute January, 2002 groundwater data for GEC-1 and GEC-2; and 2) to collect geochemical data for use in determining if biodegradation of chlorinated VOCs is occurring in the Site aquifer. We believe that the recent investigation accomplished both of these goals. However, as noted in the April 12, 2002 *RIR*, delineation of the vertical extent of groundwater contamination is not yet complete.

5.0 SUMMARY OF AREAS OF CONCERN

Figure 2 is a Site Plan showing the on-Site AOCs identified previously. The following is a summary discussion of each AOC.

AOC-1 - Previous 2,000-gallon #2 Heating Oil UST: No Further Action (NFA) for soils at this location was approved by NJDEP.

AOC-2 - Discharge Pipe Area, Western Truck Loading/Unloading Pad: Delineation of soils is complete. Soils impacted by methylene chloride and tetrachloroethene to approximately five feet below grade.

AOC-3 - Rear Discharge Area: A small area between the Mixing Tank and the north fence line has been impacted by low levels of PCE. This area has been delineated. NJDEP has approved including soil contamination detected in AOC-3 in a Deed Notice.

AOC-4 - Mixing Tank Area: The soil delineation around and beneath AOC-4 is complete. Impacts to soils in this area involve primarily PCE and MC with lesser amounts of toluene, ethylbenzene, total xylenes, 1,1,1- TCA and cis-1,2-DCE. Groundwater has also been impacted by the same VOCs.

AOC-5 - Drainage Points, Eastern Truck Loading/Unloading Pad: Delineation of VOCs and base neutral (BN) compounds in this area is complete. NJDEP has granted NFA for contamination in this area, with the exception of n-propanol. As

documented in the April 12, 2002 *RIR*, the extent of n-propanol in AOC-5 soils has been delineated.

AOC-6 - Loading Bays: Delineation of low levels of BN compounds below the asphalt is complete.

AOC-7 - Soil Pile: NFA was granted by NJDEP.

AOC-8 - Groundwater: Levels of chlorinated VOCs, including MC, VC, 1,1-DCA, cis-1,2-DCE, 1,1,1-TCA, 1,2-dichloropropane, TCE and aromatic VOCs including BTEX are present in AOC-2 and AOC-4 at concentrations exceeding the New Jersey GWQS. Low levels of benzene and methylene chloride are also present in AOC-1 at concentrations that are slightly greater than the GWQS.

6.0 RECOMMENDATIONS

Following are separate discussions of remedial alternatives for soil and groundwater contamination and recommendations for additional subsurface investigation work to determine the vertical extent of groundwater contamination are provided in the herein. The evaluation and selection of remedial alternatives draws upon the findings of recent and historic remedial investigations conducted by GEC and others is provided as a supplement to the *RAW* to the extent that previously proposed remedial actions have been revised.

6.1 Groundwater Remedial Plan

Volatile contaminants related to apparent on-Site releases are present in groundwater in AOC-1, AOC-2 and AOC-4 at concentrations that exceed the New Jersey GWQS. Groundwater in AOC-4 is impacted by chlorinated VOCs and BTEX. Benzene and methylene chloride have been detected in AOC-1, located downgradient/crossgradient of AOC-4. Laboratory analytical data for GEC-3, installed west of AOC-4 near the property boundary, and seven temporary piezometers (PZ-1 through PZ-7) installed across Amor Avenue, cross-gradient/downgradient of AOC-1, indicate that groundwater contamination is not migrating off-Site. As noted previously, concentrations of chlorinated VOCs have been detected at concentrations that suggest free-phase solvent as a dense non-aqueous phase liquid (DNAPL) may be present in AOC-2, although a Sudan IV dye test was negative.

6.1.1 Effectiveness Analysis and Certification: Groundwater

In the *RAW*, an Effectiveness Analysis and Certification (EAC) was conducted to evaluate various remedial action alternatives that were considered to offer the greatest likelihood of reducing groundwater contaminant concentrations to levels below GWQS. Among the remedial actions evaluated were: 1) bioremediation; 2) dual-phase extraction; 3) pump and treat; 4) solar evaporation; and 5) natural attenuation.

The *RAW* identified groundwater recovery in AOC-4 as the best alternative for remediating groundwater contamination beneath and adjacent to the above-ground tank farm. Under this plan, three recovery wells would be used to pump groundwater from AOC-4 into a temporary holding tank. Depending on the season, groundwater in the holding tank would either be pumped to the roof of the Site building for solar evaporation or to a tanker for off-Site disposal. Remediation via natural attenuation and periodic groundwater monitoring was proposed for AOC-1. In addition to the selected remedial alternatives, a Classification Exception Area (CEA) was proposed for the entire site for chlorinated and aromatic VOCs. The CEA would remain in effect until contaminant concentrations were reduced to levels below the GWQS.

In its June 6, 2001 correspondence to Houghton, NJDEP cited the poor sustainable yield for the aquifer, as determined by on-Site slug testing, in observing that groundwater recovery with solar evaporation or off-Site disposal may not be the most efficient way to remediate contaminated groundwater at the Site. In commenting on this remedial option, NJDEP recommended Houghton investigate innovative remedial techniques, such as injection.

Since submittal of the *RAW* Houghton has taken the opportunity to install several additional monitoring wells and collect two additional rounds of groundwater samples to better define the nature and extent of contamination. Using the data generated during these and previous investigations, Houghton developed the following remedial actions to address contaminated groundwater.

6.1.2 Proposed Remedial Actions: Groundwater

As noted by NJDEP, in an aquifer with a sustainable pumping yield of approximately 0.2 gallons per minute, any remedial option that involves pumping groundwater to a tank for treatment, solar evaporation or off-Site disposal, is not the most efficient remedial alternative. As noted in Section 3.3 herein, there is strong evidence that anaerobic biodegradation of chlorinated VOCs in groundwater is occurring at the Site. The results of the bioattenuation screening process confirm other laboratory

analytical data that document a general trend toward decreasing concentrations of chlorinated solvents. Houghton proposes injecting of Hydrogen Release Compound (HRC) into the aquifer at AOC-2 and AOC-4 to take advantage of the ongoing natural attenuation processes by enhancing anaerobic biodegradation. Groundwater contamination in AOC-1 will be addressed via monitored natural attenuation, as proposed in the *RAW*. As proposed in the *RAW*, Houghton will file paperwork for a CEA for AOC-1, AOC-2 and AOC-4. The draft CEA provided in the *RAW* will be updated prior to filing. The CEA will remain in effect for a period of seven years or until New Jersey GWQS are achieved.

Groundwater Remediation Using HRC

HRC is manufactured and marketed by the Regenesis corporation and offers a passive, low-cost approach to rapid remediation of chlorinated solvent impacted sites. The active ingredient in HRC, is an environmentally safe polyactate ester that is specially formulated for slow release of lactic acid upon contact with water in the subsurface environment. Lactic acid is broken down by indigenous microbes resulting in the release of hydrogen, which enhances the reductive chlorination of the chlorinated solvents, i.e., the transformation of a chlorinated contaminant into a non-toxic compound such as ethane or ethene. In addition to stimulating the anaerobic degradation of dissolved-phase contaminants, HRC will also desorb and degrade residual DNAPL. To treat a groundwater contaminant plume the HRC is injected directly into the plume via multiple push-points or boreholes. HRC typically maintains a continuous, low concentration of hydrogen in the subsurface environment for a period of 6 months to one year.

Designs for HRC-based bioremediation projects are based on delivering HRC into contaminated groundwater plumes in a grid or barrier pattern, or a combination of both. The selection of the appropriate design depends primarily on the size of the plume requiring remediation, groundwater velocity, site accessibility to injection equipment, and desired time frame for remediation. Grid-based designs are typically recommended for small, stationary contaminant plumes like the one at the Houghton facility where a relatively short remediation period is desired. The primary issues in designing the HRC injection grid are: 1) the amount of HRC required to support biodegradation of a given amount of contaminant; and 2) the number of delivery locations needed to effectively distribute hydrogen within the contaminant plume

The HRC injection grid for Houghton was designed using software developed by Regenesis, Site-specific information on groundwater contaminant concentrations and aquifer characteristics (e.g., hydraulic conductivity, hydraulic gradient and pore volume) gathered during the remedial investigation and, where necessary, values estimated from *Goldman Environmental Consultants, Inc.*

the scientific literature. Upon inputting the required data, the software calculates the mass of HRC in pounds that is needed to enhance conditions in the subsurface environment that favor anaerobic biodegradation.

HRC injection grids were designed for two scenarios: 1) a limited scale pilot test; and 2) remediation of the entire contaminant plume. The purpose of the pilot test is to determine definitively whether the aquifer and the contaminants are amenable to HRC-enhanced anaerobic biodegradation. If results of the pilot test indicate that HRC is effective, the entire plume will be injected with HRC. The following table describes the sources of the Site-specific data and identifies assumptions input in the Regenesis software for the two remediation scenarios. Laboratory analytical data used for the pilot test scenario are for samples collected from monitoring well MW-2 during the January, 2002 sampling round. Laboratory data used for the entire plume scenario are the arithmetic mean of two rounds of groundwater samples collected in January and June, 2002 from GEC-2, which typically exhibited the highest contaminant concentrations at the Site. Field screening data for these wells are for the June, 2002 sampling round. These data along with aquifer characteristic data provided in the *RAW* were entered into the Regenesis software to obtain an estimate of the mass of HRC needed to effect remediation via HRC-enhanced anaerobic biodegradation; spreadsheets for the two design scenarios are provided in Appendix E. Refer to Figure 3 for the boundaries of the pilot test area and the entire contaminant plume.

Input Parameter	Input Value		Comment
	Pilot Test	Entire Plume	
Site Conceptual Model			
-width of plume	25 ft	100 ft	Assumed. Refer to Figure 3.
-length of plume	25 ft	62.5 ft	Assumed. Refer to Figure 3.
-thickness of contaminated saturated zone	10 ft	10 ft	Assumed. Refer to Figure 3.
-total porosity	0.35	0.35	Provided in <i>RAW</i> .
-hydraulic conductivity	4.46 ft/day	2.4 ft/day	Provided in <i>RAW</i>
-hydraulic gradient	0.012 ft/day	0.012 ft/day	Provided in <i>RAW</i>
Dissolved Phase Electron Donor Demand (mg/L)			
-PCE	0.0029	0.047	Laboratory analysis of gw sample.
-TCE	0.016	0.27	Laboratory analysis of gw sample.
-cis-1,2-DCE	0.67	34	Laboratory analysis of gw sample.
-VC	0.12	3.2	Laboratory analysis of gw sample.
-chloroform	0.00095	0.036	Laboratory analysis of gw sample.
-carbon tetrachloride	0.0012	0.045	Laboratory analysis of gw sample.
-1,1,1-TCA	0.14	0.81	Laboratory analysis of gw sample.
-1,1-DCA	0.52	16	Laboratory analysis of gw sample.
-hexavalent chromium	not analyzed	not analyzed	None.
Sorbed Phase Electron Donor Demand			
-soil bulk density	1.7 g/cu. cm	1.7 g/cu. cm	Default assumption per Regenesis.
-fraction of organic carbon	0.005	0.005	Default assumption per Regenesis.

Input Parameter	Input Value		Comment
	Pilot Test	Entire Plume	
Competing Electron Acceptors			
-oxygen	3.33 mg/L	1.46 mg/L	Field screening.
-nitrate	0.05 mg/L	0.05 mg/L	Laboratory analysis of gw sample.
-est. Mn reduction demand	3.95 mg/L	9.62 mg/L	Laboratory analysis of gw sample.
-est. Fe reduction demand	683 mg/L	469 mg/L	Laboratory analysis of gw sample.
-est. sulfate reduction demand	16 mg/L	2.5 mg/L	Laboratory analysis of gw sample.
Injection Point Spacing and Dose			
-injection spacing within rows	7.5 ft	7.5 ft	Assumed. Based on aquifer porosity.
-injection spacing between rows	7.5 ft	7.5 ft	Assumed. Based on aquifer porosity.

As discussed previously, more investigation is necessary to determine the vertical extent of groundwater contamination. Since groundwater contamination was found in GEC-1, which is screened 23 to 33 feet below grade, the thickness of the contaminated saturated zone is likely greater than 10 feet. Therefore, the mass of HRC needed to effectively treat the contaminant plume may be greater than calculated with the above assumptions; however, the assumptions are adequate for purposes of conducting the pilot test. The HRC injection design for the entire plume will be modified, if necessary, based on data for planned investigation activities to determine the vertical extent of contamination.

Groundwater Sampling Plan for HRC and Monitored Natural Attenuation

To monitor the effectiveness of the HRC pilot test for AOC-2 and AOC-4 and to document the natural attenuation of groundwater contamination in AOC-1, periodic groundwater sampling is recommended. Houghton recommends sampling MW-2, located at the center of the area proposed for the HRC pilot test, immediately prior to HRC injection and three months after HRC injection with samples analyzed for VOCs via USEPA Method 624+10, SVOCs via USEPA Method 625+15, methane, ethane and ethane via Method 3810, and nitrate, sulfate, iron and manganese. After three months it should be clear whether the HRC is working and contaminant concentrations are decreasing. If the HRC is effective, the entire groundwater contaminant plume should be treated and MW-1, MW-2 and GEC-2 sampled on a quarterly basis for the above-listed analytes. Bi-annual sampling of MW-3 and MW-5 is recommended, with samples analyzed for VOCs via USEPA Method 624+10, to document changes in contaminant concentrations in AOC-1, selected for monitored natural attenuation (MNA).

Supplemental Groundwater Investigation: Vertical Extent of Contamination

Houghton recommends installing three additional test borings to be completed as monitoring wells for use in determining the vertical extent of groundwater contamination in AOC-2 and AOC-4; refer to Figure 2 for proposed boring/well locations. Borings will be installed with a truck-mounted, hollow-stem auger drill rig. Soil borings will be advanced to a depth of 30 to 45 feet, with the intent being to install a well screen below the zone of varved clay that typical of the aquifer at the water table. Soil samples will be collected using a split-spoon sampler at standard five-foot sampling intervals and screened for total ionizable compounds using a photoionization detector (PID) equipped with a 11.7 eV lamp.

Groundwater monitoring wells installed in each soil boring will be constructed of 4-inch I.D. Schedule 40 PVC 0.010-inch slotted screen and 4-inch I.D. Schedule 40 PVC riser. No glues or solvents will be employed in the construction of the wells. Each will be constructed with a natural sand filter set in the borehole annulus surrounding the well screen. A bentonite seal will be place above the sand filter and the remainder of each well column filled with sand pack or clean backfill. To protect the wells, a flush-mounted steel road-box will be installed and held in place by a cement collar. The newly installed wells will be surveyed by a Licensed Land Surveyor and tied into the survey for existing on-Site wells. The appropriate well construction and survey forms will be completed and provided to NJDEP.

Groundwater samples will be collected from the proposed wells no earlier than two weeks after installation and samples will be submitted for laboratory analysis for VOCs via USEPA Method 624+10 and SVOCs via USEPA Method 625+15.

6.2 Soil Remediation Plan

As discussed in the *RAW*, three AOC contain soils that are impacted by organic compounds at concentrations above the New Jersey Impact to Groundwater (IGW) or non-residential (NR) soil cleanup levels, with the majority of contaminated soils located within AOC-2 and AOC-4. An estimated 2,800 pounds (lbs) of VOCs are contained within approximately 400 cubic yards (cy) of soil distributed in dissolved and adsorbed phases within the soil and water table in these two AOC. Although no free product was detected during subsurface investigations, the relatively high concentrations of chlorinated VOCs detected in groundwater samples from GEC-2 suggest that free-phase solvents may exist in AOC-2.

6.2.1 Effectiveness Analysis and Certification: Soil

In the *RAW*, an Effectiveness Analysis and Certification (EAC) was conducted to evaluate various remedial action alternatives that were considered to offer the greatest likelihood of reducing or eliminating the potential for receptor exposure to contaminants of concern at AOC-2 and AOC-4 while protecting public health, safety and the environment. Among the remedial actions evaluated were: 1) soil vapor extraction/air sparging (SVE/AS); 2) excavation; 3) encapsulation; and 4) bioflushing.

The *RAW* concluded that SVE/AS was not a viable remedial option given the relatively shallow water table, which limits the effectiveness of such systems. Selective excavation of contaminant "hotspots" was recommended for remediating VOC-contaminated soils in AOC-2 and AOC-4 (i.e., those areas located outside the above-ground tank farm). Encapsulation or capping was recommended for marginally contaminated soils in AOC-3 and AOC-6, and for AOC-2 and the portion of AOC-4 located outside the above-ground tank farm following the excavation of soil hotspots. Encapsulation would be completed after hotspot excavation and would be accompanied by a deed notice to restrict future access to soils. NJDEP did not approve the use of bioflushing, which was recommended in the *RAW* to remediate soils located beneath the above-ground tank farm in AOC-4 and directed that Houghton develop an alternate strategy for remediating these soils. As discussed below, Houghton believes that HRC injection, which is recommended to enhance the ongoing natural attenuation of chlorinated VOCs in AOC-4 groundwater, will also facilitate a reduction in soil contamination at this location.

Further detail on the proposed remedial actions for soil, including discussion of the recommended remedial alternative for AOC-4 soils beneath the tank farm, are provided below.

6.2.2 Proposed Remedial Actions: Soil

Houghton proposes selective excavation of contaminated soil hotspots in AOC-2 and AOC-4, encapsulation or capping of marginally contaminated soils in AOC-3 and AOC-6 and following hotspot excavation, encapsulation for AOC-2 and the portion of AOC-4 located outside the above-ground tank farm. Depth to groundwater ranges between 1 to 5 feet across the Site and between 1 to 3 feet in the vicinity of the above-ground tank farm. Since the tank farm is situated approximately 1 to 2 feet below grade, only 1 to 2 feet of vadose zone soils are present beneath the tank farm. Houghton believes that contamination in the vadose zone soils will be degraded over time by HRC

in groundwater when the vadose zone soils are saturated during periods of an elevated water table resulting from normal, seasonal fluctuation in the water table.

Hotspot Soil Excavation

Houghton proposes excavating approximately 50 to 60 cy of soil contaminated with chlorinated VOCs at the northwestern corner of the Site building, adjacent to the above-ground tank farm. Boundaries of the proposed excavation area were determined by reviewing laboratory analytical data and field screening data for soil at this AOC-2/AOC-4 location; refer to Figure 4. Within the proposed excavation bounds are four soil sampling locations (H-8, H-19, H-19.1 and #13) where one or more compounds were detected at concentrations exceeding New Jersey IGW. GEC will supervise excavation work, which will be subcontracted to Clean Venture, Inc. (CVI). CVI will "live-load" excavated soil directly into dump trailers to avoid potential hazards associated with temporary stockpiling of soils and to minimize disruptions to normal facility operations. Soil targeted for removal is considered an "F List" waste, due to the nature of the contaminants, and will be handled and disposed of accordingly.

During soil excavation activities, GEC will screen soil samples from the floor and sidewalls of the excavation using a PID equipped with a 11.7 eV lamp. As illustrated in Figure 4, excavation dimensions will be approximately 75 feet long, 10 feet wide, and 2 feet deep or to the water table, whichever comes first. Six confirmatory soil samples will be collected from the excavation and submitted for laboratory analysis for VOC and SVOC via USEPA Methods 624+10 and 625+15, respectively, to document residual soil concentrations; refer to Figure 4 for confirmatory sampling locations. The excavation will be backfilled with certified clean fill and underlying soils encapsulated as described below.

Soil Encapsulation

Encapsulation or capping was recommended for marginally contaminated soils in AOC-3 and AOC-6, and for AOC-2 and the portion of AOC-4 located outside the above-ground. These areas of the Site are presently covered by bituminous pavement or a 12 to 18-inch layer of crushed stone and stone dust. The crushed stone cap at the northwest corner of the Site building will be repaired be after hotspot excavation work is complete and a deed notice filed to restrict future access to soils by human or environmental receptors. A copy of the deed notice was provided in the *RAW*.

HRC Treatment of Soils Underlying Above-Ground Tank Farm

It is not possible to excavate contaminated soils located beneath the above-ground tank farm without seriously disrupting operations at the on-Site facility. Therefore, few Goldman Environmental Consultants, Inc.

options are available to reduce contaminant concentrations in soils underlying the tank farm. The relatively shallow water table precludes using SVE/AS and excavation is not possible; however, Houghton believes that seasonal fluctuations of the shallow water table will periodically saturate vadose zone soils in this area with groundwater treated with HRC. As with groundwater, HRC will facilitate anaerobic biodegradation of chlorinated VOCs in soil. Post-remedial soil samples will be collected from beneath the above-ground tank farm when the concentrations of groundwater contaminants approach the cleanup goals.

7.0 DISPOSAL METHODS

As discussed above, soil removed during the hotspot excavation in AOC-2/AOC-4 will be "live-loaded" into dump trailers and disposed off-Site at a permitted facility. Proper RCRA waste classification and waste manifest procedures will be followed during disposal activities. No waste will be generated in implementing the proposed remedial activities for groundwater.

8.0 PERMITS

Well permits will be obtained from the NJDEP Bureau of Water Allocation before the recovery wells are installed. Since less than 5,000 ft² of surface area will be disturbed during soil excavation, a Soil Erosion and Sediment Control permit will not be required.

9.0 POST-REMEDIAL ACTIONS

A Remedial Action Report will be prepared and submitted to NJDEP along with an affidavit for a Negative Declaration, where applicable, upon completion of remedial actions. The Deed Notice will be filed with Somerset County and the CEA will be submitted to the Borough of Carlstadt Health Department and to the Borough Clerk for their records.

10.0 COST ESTIMATE

Following are cost estimates for the remedial work proposed and described above. Work related to the HRC pilot test, hotspot soil excavation and supplemental groundwater investigation will likely be conducted contemporaneously, resulting in labor cost savings.

Groundwater Remediation: HRC Pilot Test

Subcontractor Labor, Equipment & Materials	\$2,500
HRC Material Cost	\$2,640
<u>GEC Labor & Laboratory Analysis*</u>	<u>\$2,800</u>
Total	\$7,940

Groundwater Remediation: Entire Plume**

Subcontractor Labor, Equipment & Materials	\$7,000
HRC Material Cost	\$30,600
<u>GEC Labor & Laboratory Analysis</u>	<u>\$13,300</u>
Total	\$50,900

Groundwater Remediation: MNA Sampling

<u>Laboratory Analysis***</u>	<u>\$500</u>
Total	\$500

Supplemental Groundwater Investigation

Subcontractor Labor, Equipment & Materials	\$4,750
Licensed Land Surveyor	\$575
<u>GEC Labor & Laboratory Analysis****</u>	<u>\$3,725</u>
Total	\$9,050

Hotspot Soil Excavation

Subcontractor Labor, Equipment & Materials	\$2,170
HRC Material Cost	\$23,375
<u>GEC Labor & Laboratory Analysis</u>	<u>\$5,000</u>
Total	\$30,445

Notes:

- * = Assumes one sampling round three months after HRC injection.
- ** = Cost for a single application of HRC and one year of quarterly groundwater sampling. Final costs may vary depending upon the vertical extent of groundwater contamination.
- *** = Assumes one year of bi-annual groundwater sampling. Labor costs included in cost estimate for HRC sampling.
- **** = Assumes one sampling round following well installation.

This estimate does not include costs for project management, well repair/abandonment, progress reports, Remedial Action Report or additional remedial or investigatory work beyond that described above.

11.0 IMPLEMENTATION SCHEDULE

A remedial action implementation schedule will be provided after NJDEP approves the work proposed herein.

12.0 QUARTERLY PROGRESS REPORTS

Quarterly progress reports will be submitted to NJDEP while remedial work is underway. The RAW Administrative Checklist was submitted with the original RAW.

13.0 HEALTH AND SAFETY PLAN

A health and safety plan was provided in the *RAW*. All remedial and investigatory work proposed herein will be conducted in Level D, with Level C standby.

14.0 QUALITY ASSURANCE/QUALITY CONTROL

All quality assurance/quality control procedures outlined in the *RAW* will be followed in implementing the remedial and investigatory work described herein.

15.0 WARRANTY

The conclusions and recommendations contained in this report are based on the information available to GEC and upon the current regulatory climate as of August 1, 2002. The conclusions and recommendations may require revision if future regulatory changes occur. GEC provides no warranties on information provided by third parties and contained herein. Data compiled was in accordance with GEC's existing procedures and consistent with N.J.A.C. 7:26E, and should not be construed beyond its limitations. Any interpretations or use of this report other than those expressed herein are not warranted.

The use, partial use, or duplication of this report without the written consent of Goldman Environmental Consultants, Inc. is strictly prohibited. This report is subject to GEC's Contract for Consulting Services with the client.

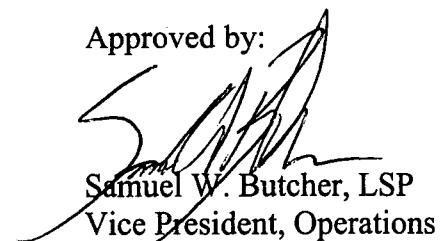
Respectfully submitted,
Goldman Environmental Consultants, Inc.

Prepared by:



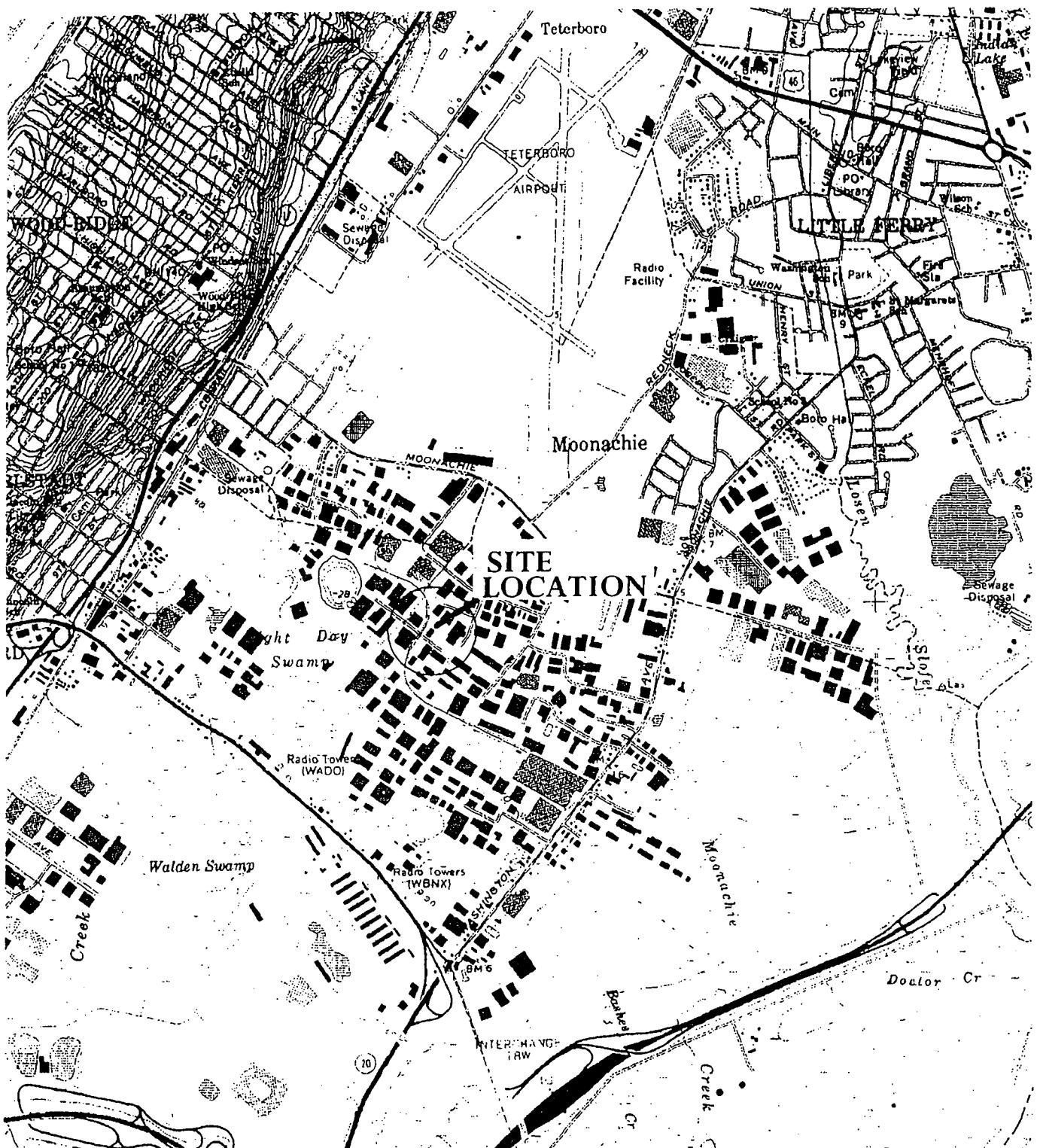
Parrish C. Smoldha
Project Manager

Approved by:



Samuel W. Butcher, LSP
Vice President, Operations

FIGURES



SOURCE:
USGS TOPOGRAPHIC MAP
WEEHAWKEN QUADRANGLE

SCALE:	1" = 2000 FEET
CHECKED BY:	S. LANEY
FILE: D:\ELCO\CDWG\TOPOFIG1	DATE: 10/6/98

**HYDRO-GEO
CORPORATION**
428 SUNSET ROAD
SKILLMAN, N.J. 08558

phone (908) 904-9022

fax (908) 904-1421

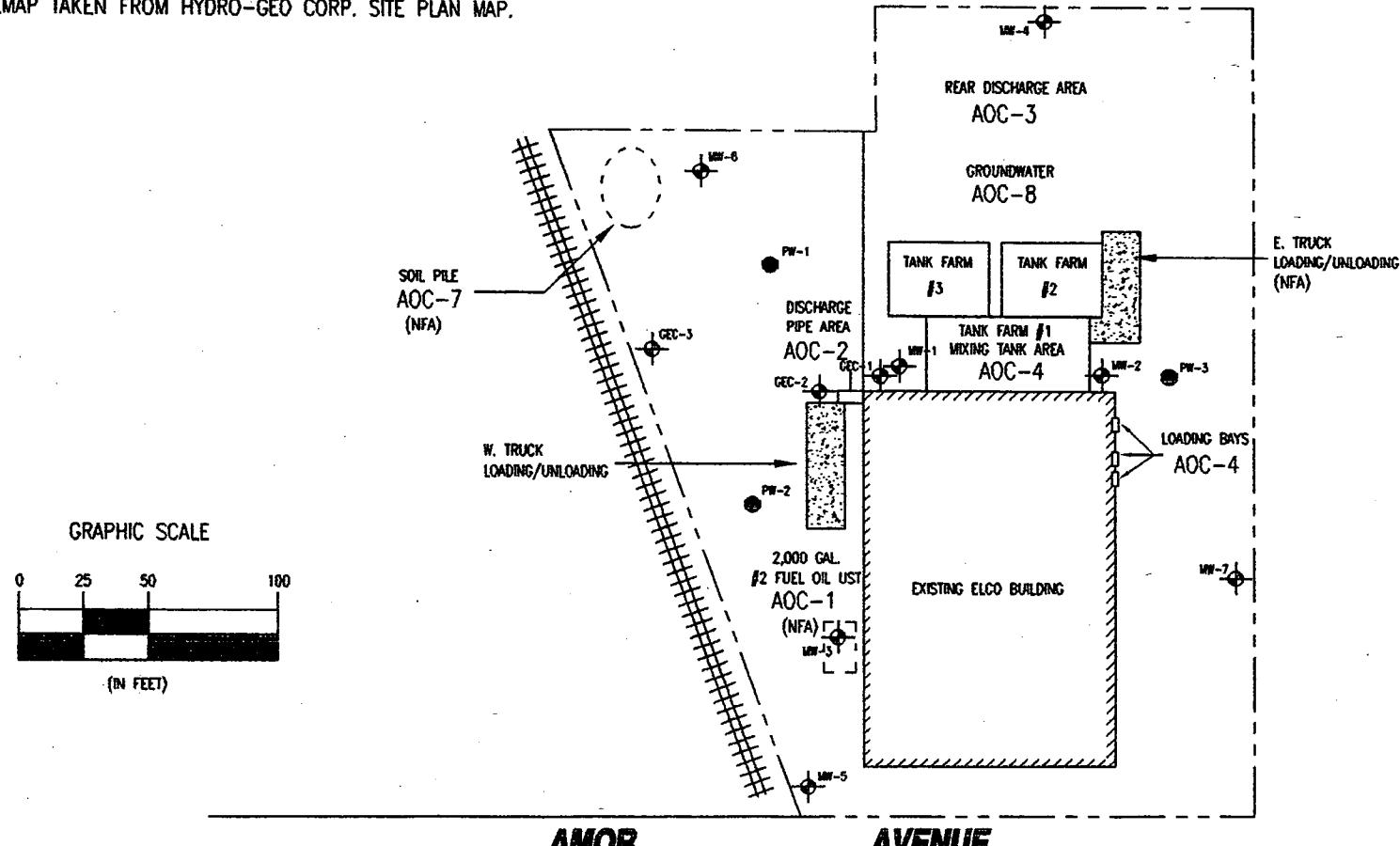
TITLE:
**SITE LOCATION
AND TOPOGRAPHIC MAP**

ELCO SOLVENTS CORP.
CARLSTADT, NJ

Figure 1

NOTES

- 1.) THIS DRAWING IS A GRAPHICAL REPRESENTATION ONLY AND SHOULD NOT BE USED AS A SURVEY.
 - 2.) BASEMAP TAKEN FROM HYDRO-GEO CORP. SITE PLAN MAP.



AMOR AVENUE

LEGEND

AOC-1	AREA OF CONCERN
(NFA)	NO FURTHER ACTION
<u>1 MW-5/GEC-1</u>	MONITORING WELL
-----	PROPERTY LINE
	RAILROAD EASEMENT
PW-2	PROPOSED MONITORING WELL

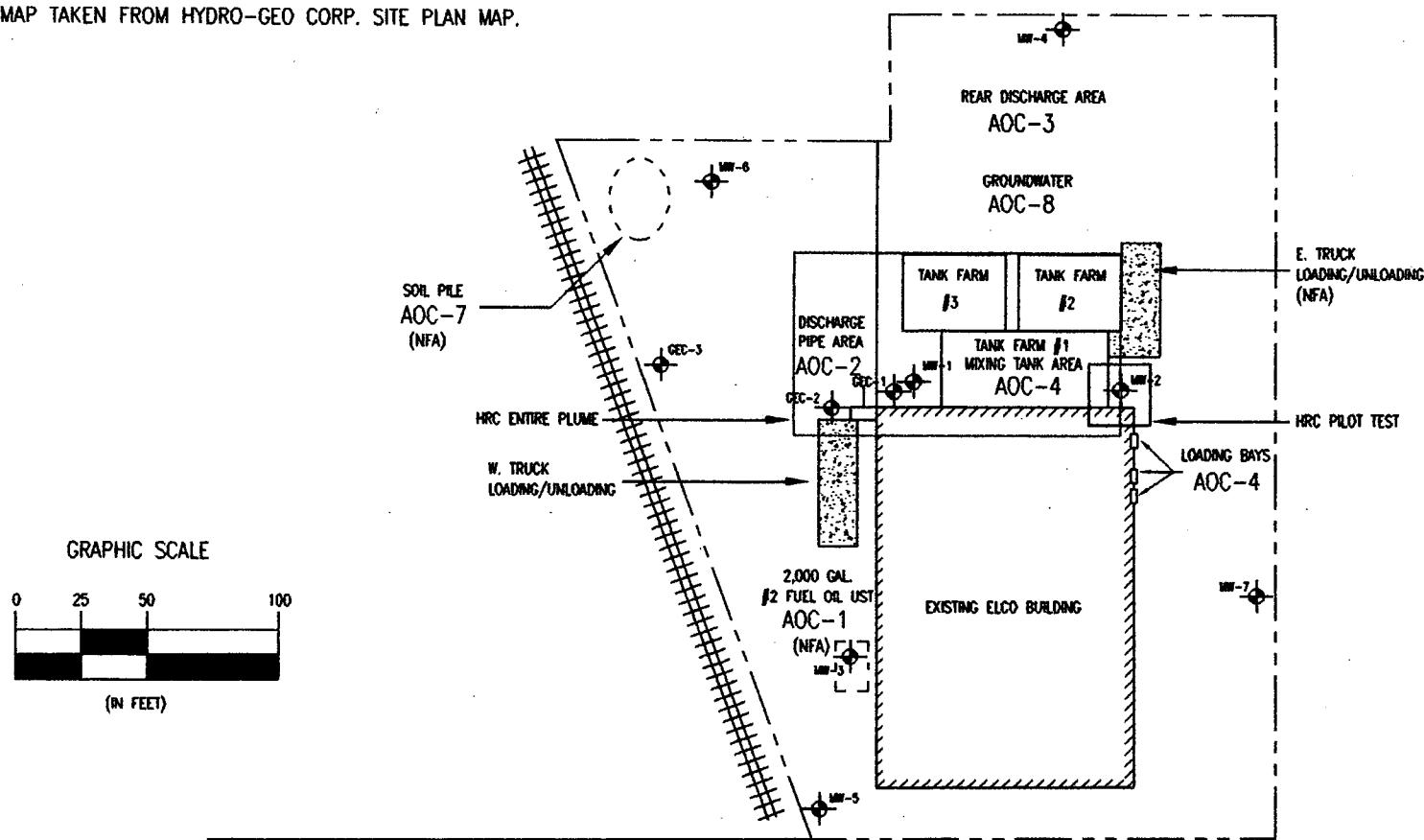
ELCO SOLVENTS 30 AMOR AVENUE, CARLSTADT, NJ	SITE PLAN WITH AREAS OF CONCERN AND PROPOSED WELLS
GEC Goldman Environmental Consultants, Inc. 60 Brooks Drive, Braintree, MA 02184 (781) 356-9140 Fax: (781) 356-9147	ID# 031502B
CLIENT: HOUGHTON CHEMICALS	
SCALE: AS SHOWN DRAWN BY: JF	
DATE: 7-31-02 CHECKED BY:PS	

2

FIGURE NO.
1061-1020
PROJECT NO.

NOTES

- 1.) THIS DRAWING IS A GRAPHICAL REPRESENTATION ONLY AND SHOULD NOT BE USED AS A SURVEY.
- 2.) BASEMAP TAKEN FROM HYDRO-GEO CORP. SITE PLAN MAP.



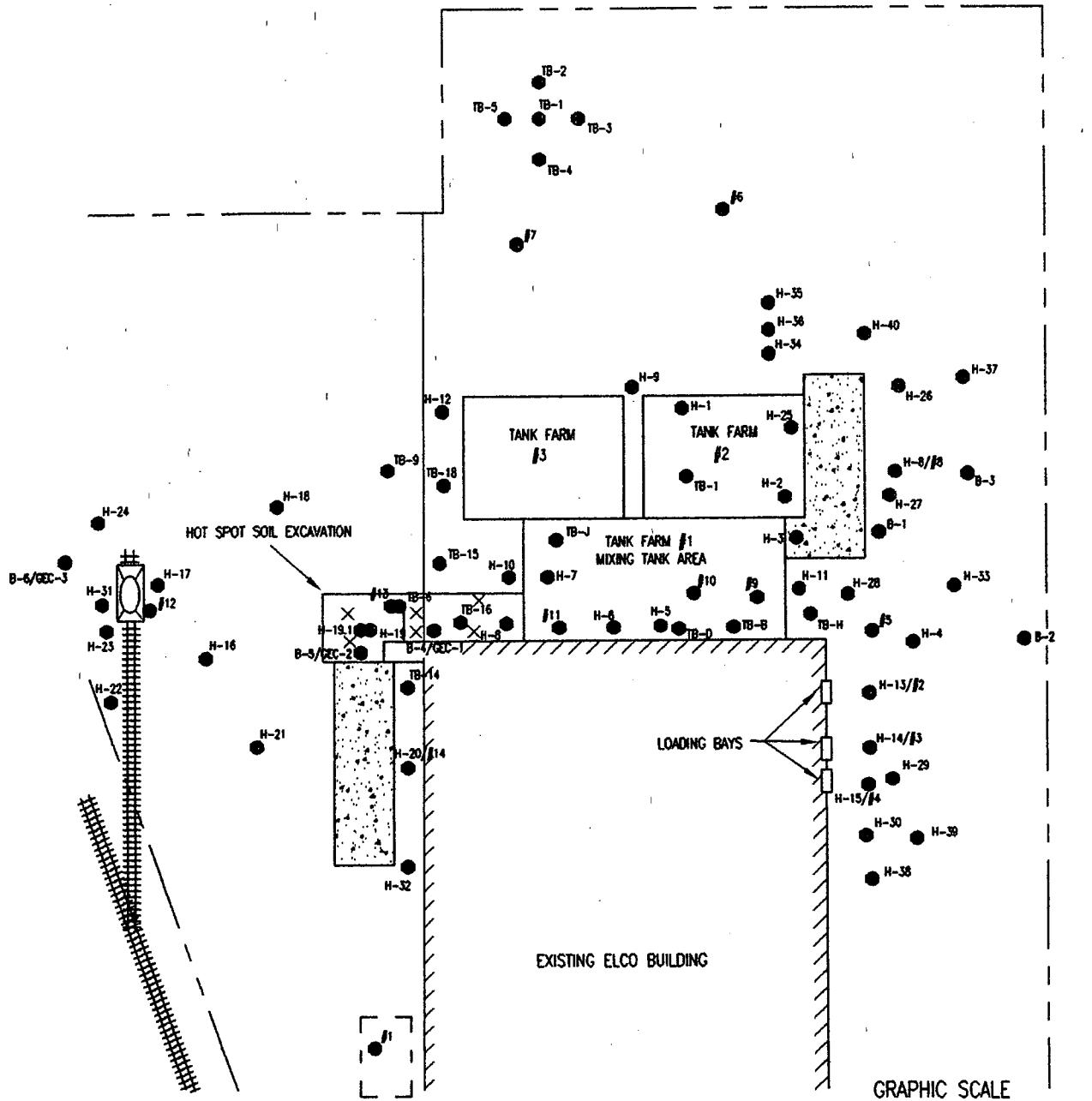
LEGEND

AOC-1	AREA OF CONCERN
(NFA)	NO FURTHER ACTION
MW	MONITORING WELL
—	PROPERTY LINE
	RAILROAD EASEMENT

ELCO SOLVENTS		PROPOSED HRC INJECTION AREAS	
30 AMOR AVENUE, CARLSTADT, NJ			
GEC	ID# 031502B	CLIENT: HOUGHTON CHEMICALS	
Goldman Environmental Consultants, Inc. 60 Brooks Drive, Braintree, MA 02184 (781) 356-9140 Fax: (781) 356-9147		SCALE: AS SHOWN	DRAWN BY: JF
		DATE: 7-31-02	CHECKED BY: PS

3

FIGURE NO.
1061-1020
PROJECT NO.



LEGEND

----- PROPERTY LINE



SITE BUILDING



H-38 SOIL BORING LOCATION

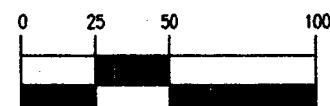
RAILROAD EASEMENT



CONFIRMATORY SOIL SAMPLE

NOTES

- 1.) THIS DRAWING IS A GRAPHICAL REPRESENTATION ONLY AND SHOULD NOT BE USED AS A SURVEY.
- 2.) BASEMAP TAKEN FROM GEC MAP #031502B.



(IN FEET)

GEC

ELCO SOLVENTS

30 AMOR AVENUE, CARLSTADT, NJ

Goldman Environmental Consultants, Inc.
60 Brooks Drive, Braintree, MA 02184
(781) 356-9140 Fax: (781) 356-9147

ID# 031502C

**PROPOSED HOTSPOT
SOIL EXCAVATION**

CLIENT: HOUGHTON CHEMICALS

SCALE: AS SHOWN

DRAWN BY: JF

DATE: 7-31-02

CHECKED BY: PS

4

FIGURE NO.

1061-1020
PROJECT NO.

TABLES

TABLE 1
 SUMMARY OF SAMPLES COLLECTED 6/4/02
 ELCO SOLVENTS
 CARSTADT, NJ

Field Sample ID	Lab Sample ID	Sample Date	Sample Matrix	GROUNDWATER ANALYTICAL PARAMETERS			
				VOLATILE COMPOUNDS (624 + 10) ⁽¹⁾	BASE NEUTRAL COMPOUNDS (625 + 15)	METHANE, ETHANE, ETHENE (3810)	Fe, Mn, NITRATE & SULFATE
MW-1	354106	6/4/02	Groundwater			X	X
MW-2	354111	6/4/02	Groundwater			X	X
MW-3	354112	1/15/02	Groundwater			X	X
GEC-1	354107	1/30/02	Groundwater	X	X	X	X
GEC-2	354110	1/30/02	Groundwater	X	X	X	X
Trip Blank Water	354109	1/15/02	Blank QA/QC	X		X	
Field Blank	354108	1/15/02	Blank QA/QC	X	X	X	X

Notes:

1) Analysis also included MTBE and n-propanol.

X = Samples collected

TABLE 2
SUMMARY OF MONITORING WELL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Monitoring Well Designation	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6⁽¹⁾	MW-7	GEC-1/MW-10⁽³⁾	GEC-2/MW-9	GEC-3/MW-8
Permit Number	26-51024	26-51025	26-51026	26-51446	26-51447	26-54575	26-54576	26-62793	26-62792	26-62791
Total Depth	10'	10'	12'	10'	10'	7'	8'	33'	12'	12'
Inner Diameter	4"	4"	4"	4"	4"	2"	2"	1"	1"	1"
Material	PVC	PVC	PVC	PVC	PVC	PVC	PVC	PVC	PVC	PVC
Casing Type	Flush	Flush	Flush	Flush	Flush	Stickup	Flush	Flush	Flush	Flush
PVC Riser Length	2'	2'	2'	2'	2'	3.2'	1.2'	23'	2'	2'
PVC Screen Length	8'	8'	10'	8'	8'	5.5'	6.5'	10'	10'	10'
Slot Size	0.01"	0.01"	0.01"	0.02"	0.02"	0.01"	0.01"	0.01"	0.01"	0.01"
PVC Elev. (feet)	1.23	1.95	2.37	0.24	3.04	2.99	1.82	2.40	2.77	2.75
SWL (feet)⁽²⁾	1.16	0.85	3.69	--	5.15	--	2.03	2.00	2.68	2.97
Elev. SWL (feet)	0.07	1.10	-1.32	--	-2.11	--	-0.21	0.40	0.09	-0.22

Notes:

1) MW-6 was damaged and could not be sampled. Unable to locate MW-4.

2) Static water level measurements on June 4, 2002. Measurement from PVC riser to water table.

3) Construction details provided for GEC-1 are based on the driller's Monitoring Well Record. However,

GEC's field notes describe the well as 35' in total depth with 5 feet of screen. Since GEC was unable to reconcile the differences between these two accounts of well construction with the driller, the well construction record provided by the driller was used in preparing this Remedial Investigation Report.

SWL = Static Water Level

TOC = Top of casing

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL DATA:
SAMPLES COLLECTED 6/4/02
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	GEC-1 354107 06/04/02 WATER 1000.0 ug/L	GEC-2 354110 06/04/02 WATER 200.0 ug/L	MW-1 354106 06/04/02 WATER	MW-2 354111 06/04/02 WATER	MW-3 354112 06/04/02 WATER	Field_Blank 354108 06/04/02 WATER 1.0 ug/L	Trip_Blank 354109 06/03/02 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC/MS)								
	Chloromethane	30	430 U	86 U	NR	NR	0.4 U	0.4 U
	Bromomethane	10	320 U	64 U	NR	NR	0.3 U	0.3 U
	VinylChloride	5	290 U	2600	NR	NR	0.3 U	0.3 U
	Chloroethane	NA	480 U	7300	NR	NR	0.5 U	0.5 U
	MethyleneChloride	3 ^a	110000	19000	NR	NR	0.9 U	0.9 U
	Trichlorofluoromethane	NA	410 U	82 U	NR	NR	0.4 U	0.4 U
	1,1-Dichloroethene	2	290 U	58 U	NR	NR	0.3 U	0.3 U
	1,1-Dichloroethane	50 ^a	3500	7500	NR	NR	0.3 U	0.3 U
	trans-1,2-Dichloroethene	100	230 U	46 U	NR	NR	0.2 U	0.2 U
	cis-1,2-Dichloroethene	70 ^a	6000	23000	NR	NR	0.3 U	0.3 U
	Chloroform	6	250 U	50 U	NR	NR	0.2 U	0.2 U
	1,2-Dichloroethane	2	1700	72 U	NR	NR	0.4 U	0.4 U
	1,1,1-Trichloroethane	30	370	52 U	NR	NR	0.3 U	0.3 U
	CarbonTetrachloride	2	300 U	60 U	NR	NR	0.3 U	0.3 U
	Bromodichloromethane	1	200 U	40 U	NR	NR	0.2 U	0.2 U
	1,2-Dichloropropane	1	9100	4700	NR	NR	0.4 U	0.4 U
(1)	cis-1,3-Dichloropropene	NA	300 U	60 U	NR	NR	0.3 U	0.3 U
	Trichloroethene	1	3000	41	NR	NR	0.1 U	0.1 U
	Dibromochloromethane	10	270 U	54 U	NR	NR	0.3 U	0.3 U
	1,1,2-Trichloroethanes	3	280 U	56 U	NR	NR	0.3 U	0.3 U
	Benzene	1	290 U	58 U	NR	NR	0.3 U	0.3 U
(1)	trans-1,3-Dichloropropene	NA	280 U	56 U	NR	NR	0.3 U	0.3 U
	2-ChloroethylVinylEther	NA	470 U	94 U	NR	NR	0.5 U	0.5 U
	Bromoform	4	290 U	58 U	NR	NR	0.3 U	0.3 U
	Tetrachloroethene	1	1600	48 U	NR	NR	0.2 U	0.2 U
	1,1,2,2-Tetrachloroethane	1 ^a	310 U	62 U	NR	NR	0.3 U	0.3 U
	Toluene	1,000	2200	4900	NR	NR	0.2 U	0.2 U
	Chlorobenzene	50 ^a	210 U	42 U	NR	NR	0.2 U	0.2 U
	Ethylbenzene	700	150 U	30 U	NR	NR	0.2 U	0.2 U
	Xylene(Total)	1000 ^a	550	36 U	NR	NR	0.2 U	0.2 U
	MTBE	70 ^a	260 U	52 U	NR	NR	0.3 U	0.3 U
	n-Propanol	NA	500000 U	100000 U	NR	NR	500 U	500 U
Total Confident Conc. VOAs (s)	-	138020	69041				0	0
Total Estimated Conc. VOA TICs (s)		76300	22420				0	0

Notes:

- (1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.
 - (2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.
 - (3) Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.
- ^a Value is a revision to the Class IIA ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.

Qualifiers:

- U - The compound was not detected at the indicated concentration.
- J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.
- B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
- NR - Not analyzed.

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL DATA:
SAMPLES COLLECTED 6/4/02
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	GEC-1 354107 06/04/02 WATER 100.0 ug/L	GEC-2 354110 06/04/02 WATER 100.0 ug/L	MW-1 354106 06/04/02 WATER	MW-2 354111 06/04/02 WATER	MW-3 354112 06/04/02 WATER	Field_Blank 354108 06/04/02 WATER 1.0 ug/L	Trip_Blank 354109 06/03/02 WATER
SEMOVOLATILE COMPOUNDS (GC/MS)								
N-Nitrosodimethylamine	20	83 U	69 U	NR	NR	NR	0.6 U	NR
bis(2-Chloroethyl)ether	10	80 U	67 U	NR	NR	NR	0.6 U	NR
1,3-Dichlorobenzene	600	100 U	84 U	NR	NR	NR	0.8 U	NR
1,4-Dichlorobenzene	75	110 U	89 U	NR	NR	NR	0.8 U	NR
1,2-Dichlorobenzene	600	110 U	92 U	NR	NR	NR	0.8 U	NR
bis(2-chloroisopropyl)ether	300	67 U	56 U	NR	NR	NR	0.5 U	NR
N-Nitroso-di-n-propylamine	20	160 U	140 U	NR	NR	NR	1.2 U	NR
Hexachloroethane	10	110 U	96 U	NR	NR	NR	0.9 U	NR
Nitrobenzene	10	100 U	83 U	NR	NR	NR	0.8 U	NR
Isophorone	100	14000	24 U	NR	NR	NR	0.2 U	NR
bis(2-Chloroethoxy)methane	NA	85 U	71 U	NR	NR	NR	0.7 U	NR
1,2,4-Trichlorobenzene	9	100 U	84 U	NR	NR	NR	0.8 U	NR
Naphthalene	300*	84 U	100	NR	NR	NR	0.6 U	NR
Hexachlorobutadiene	1	150 U	130 U	NR	NR	NR	1.2 U	NR
Hexachlorocyclopentadiene	50	220 U	180 U	NR	NR	NR	1.7 U	NR
2-Chloronaphthalene	NA	110 U	89 U	NR	NR	NR	0.8 U	NR
Dimethylphthalate	NA	72 U	60 U	NR	NR	NR	0.6 U	NR
Acenaphthylene	NA	77 U	64 U	NR	NR	NR	0.6 U	NR
(1) 2,6-Dinitrotoluene	NA	53 U	44 U	NR	NR	NR	0.4 U	NR
Acenaphthene	400	76 U	63 U	NR	NR	NR	0.6 U	NR
(1) 2,4-Dinitrotoluene	10	33 U	28 U	NR	NR	NR	0.3 U	NR
Diethylphthalate	5,000	5300	22000	NR	NR	NR	0.4 U	NR
4-Chlorophenyl-phenylether	NA	110 U	93 U	NR	NR	NR	0.9 U	NR
Fluorene	300	81 U	68 U	NR	NR	NR	0.6 U	NR
N-Nitrosodiphenylamine	20	69 U	58 U	NR	NR	NR	0.5 U	NR
4-Bromophenyl-phenylether	NA	260 U	210 U	NR	NR	NR	2.0 U	NR
Hexachlorobenzene	10	150 U	120 U	NR	NR	NR	1.1 U	NR
Phenanthrene	NA	65 U	54 U	NR	NR	NR	0.5 U	NR
Anthracene	2,000	56 U	47 U	NR	NR	NR	0.4 U	NR
Di-n-butylphthalate	900	56 U	47 U	NR	NR	NR	0.4 U	NR
Fluoranthene	300	55 U	46 U	NR	NR	NR	0.4 U	NR
Pyrene	200	56 U	47 U	NR	NR	NR	0.4 U	NR
Benzidine	50	3300 U	2700 U	NR	NR	NR	25 U	NR
Butylbenzylphthalate	100	53 U	44 U	NR	NR	NR	0.4 U	NR
3,3'-Dichlorobenzidine	60	170 U	140 U	NR	NR	NR	1.3 U	NR
Benz(a)anthracene	NA	51 U	42 U	NR	NR	NR	0.4 U	NR
Chrysene	NA	65 U	54 U	NR	NR	NR	0.5 U	NR
bis(2-Ethylhexyl)phthalate	30	59 U	49 U	NR	NR	NR	17	NR
Di-n-octylphthalate	100	17 U	14 U	NR	NR	NR	0.1 U	NR
Benzo(k)fluoranthene	NA	36 U	30 U	NR	NR	NR	0.3 U	NR
Benzo(a)fluoranthene	NA	110 U	91 U	NR	NR	NR	0.8 U	NR
Benzo(a)pyrene	NA	20 U	17 U	NR	NR	NR	0.2 U	NR
Indeno(1,2,3-cd)pyrene	NA	19 U	16 U	NR	NR	NR	0.1 U	NR
Dibenz(a,h)anthracene	NA	84 U	70 U	NR	NR	NR	0.6 U	NR
Benzo(g,h,i)perylene	NA	47 U	39 U	NR	NR	NR	0.4 U	NR
Total Confident Conc. BNAs (s)		19300	22100				17	
Total Estimated Conc. BNA TICs (s)		319100	73970				0	

Notes:

- (1) Values listed reflect the combined standards for the 2,4/2,6-Dinitrotoluene mixture.
 - (2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.
 - (3) Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.
- ^aValue is a revision to the Class II A ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.

Qualifiers:

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- NR - Not analyzed.

TABLE 3
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SAMPLES COLLECTED 6/4/02
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/L)	GEC-1 354107 06/04/02 WATER 100.0 ug/L	GEC-2 354110 06/04/02 WATER 10.0 ug/L	MW-1 354106 06/04/02 WATER 100.0 ug/L	MW-2 354111 06/04/02 WATER 25.0 ug/L	MW-3 354112 06/04/02 WATER 100.0 ug/L	Field_Blank 354108 06/04/02 WATER 1.0 ug/L	Trip_Blank 354109 06/03/02 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC)								
Methane	NA	9400	1200	5500	1600	8800	5.0 U	5.0 U
Ethene	NA	500 U	150	500 U	120 U	500 U	5.0 U	5.0 U
Ethane	NA	500 U	50 U	500 U	120 U	500 U	5.0 U	5.0 U

Qualifiers:

- U - The compound was not detected at the indicated concentration.
- J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero.
The concentration given is an approximate value.
- B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
- NR - Not analyzed.

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL DATA:
SAMPLES COLLECTED 6/4/02
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	GEC-1 354107 06/04/02 WATER NA ug/l	GEC-2 354110 06/04/02 WATER NA ug/l	MW-1 354106 06/04/02 WATER NA ug/l	MW-2 354111 06/04/02 WATER NA ug/l	MW-3 354112 06/04/02 WATER NA ug/l	Field_Blank 354108 06/04/02 WATER NA ug/l	Trip_Blank 354109 06/03/02 WATER NR NR
METALS								
Iron	300	910000	469000	47200	683000	122000	37.1	U
Manganese	50	56400	9620	2680	3950	7310	1.0	NR

Notes:

- (1) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.
- (2) Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.

Qualifiers:

- U - The compound was not detected at the indicated concentration.
- B - Reported value is less than the Method Detection Limit but greater than or equal to the Instrument Detection Limit.
- N - The spiked sample recovery is not within control limits.
- NR - Not analyzed.

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL DATA:
SAMPLES COLLECTED 6/4/02
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor - NA Units - See Parameter	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	GEC-1 354107 06/04/02 WATER	GEC-2 354110 06/04/02 WATER	MW-1 354106 06/04/02 WATER	MW-2 354111 06/04/02 WATER	MW-3 354112 06/04/02 WATER	Field_Blank 354108 06/04/02 WATER	Trip_Blank 354109 06/03/02 WATER
WET CHEMISTRY								
Nitrate - mg/l	10,000	0.1	U	0.1	U	0.1	U	0.1
Sulfate - mg/l	250,000	33.8		5.0	U	5.0	U	5.0

Notes:

- (1) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.
- (2) Concentrations in BOLD exceed New Jersey Groundwater Quality Criteria.

Qualifiers:

- U - The compound was not detected at the indicated concentration.
- NR - Not analyzed.

TABLE 4
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-1					MW-2				
		3810-001 7/8/98 WATER 1000 ug/L	152040 8/19/99 WATER 100.0 ug/L	327175 01/15/02 WATER 100.0 ug/L	354106 06/04/02 WATER 1000 ug/L		3810-002 7/8/98 WATER 1000 ug/L	152041 8/19/99 WATER 1000 ug/L	327176 01/15/02 WATER 25.0 ug/L	354111 06/04/02 WATER 10.0 ug/L	
VOLATILE COMPOUNDS (GC/MS)											
	Chloromethane	30	1,000	U	42	U	33	U	NR	1,000	U
	Bromomethane	10	1,000	U	55	U	21	U	NR	1,000	U
	VinylChloride	5	1,000	U	5,900		72		NR	1,000	U
	Chloroethane	NS	1,000	U	1,900		610		NR	1,000	U
	^ MethyleneChloride	3	37,300		380		3,100		NR	8,590	620
	Trichlorofluoromethane	NS	1,000	U	35	U	35	U	NR	1,000	U
	1,1-Dichloroethene	2	1,000	U	220		24	U	NR	1,000	U
	^ 1,1-Dichloroethane	50	1,770		2,900		290		NR	1,780	1,600
	trans-1,2-Dichloroethene	100	1,000	U	45	U	26		NR	1,000	U
	^ cis-1,2-Dichloroethene	70	NR		12,000		1,000		NR	NR	2,800
	Chloroform	6	1,000	U	37	U	19	U	NR	1,000	U
	1,2-Dichloroethane	2	1,000	U	29	U	21	U	NR	1,000	U
	1,1,1-Trichloroethane	30	1,130		55		35		NR	2,460	1,600
	CarbonTetrachloride	2	1,000	U	44	U	25	U	NR	1,000	U
	Bromodichloromethane	1	1,000	U	23	U	16	U	NR	1,000	U
	1,2-Dichloropropane	1	1,600		2,300		300		NR	1,720	1,600
(1)	cis-1,3-Dichloropropene	NS	1,000	U	27	U	17	U	NR	1,000	U
	Trichloroethene	1	1,090		31	U	43		NR	1,000	U
	Dibromochloromethane	10	1,000	U	32	U	13	U	NR	1,000	U
	1,1,2-Trichloroethane	3	1,000	U	35	U	20	U	NR	1,000	U
	Benzene	1	500	U	33	U	23		NR	500	U
(1)	trans-1,3-Dichloropropene	NS	1,000	U	31	U	15	U	NR	1,000	U
	2-ChlorethylVinylEther	NS	1,000	U	42	U	42	U	NR	1,000	U
	Bromoform	NS	1,000	U	33	U	18	U	NR	1,000	U
	Tetrachloroethene	4	1,000	U	14	U	28	U	NR	1,000	U
	^ 1,1,2,2-Tetrachloroethane	1	1,000	U	32	U	12	U	NR	1,000	U
	Toluene	1,000	1,000	U	1,800		2,000		NR	1,990	2,300
	^ Chlorobenzene	50	1,000	U	19	U	15	U	NR	1,000	U
	Ethylbenzene	700	1,000	U	160		130		NR	1,000	U
	^ Xylene(Total)	1,000	1,000	U	1,100		850		NR	1,000	U
	^ MTBE	70	NR		35	U	19	U	NR	NR	8.8
	n-Propanol	NS	NR		10,000	U	25,000	U	NR	NR	2,500
	Total Confident Conc. VOAs (s)		42,890		28,715		8,479		16,540	14,551	3231
	Total Estimated Conc. VOA TICs (s)		33,700		110,830		63,670		3,600	9,560	337

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

(2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.

^ Standard is a revision to the Class IIA ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.

Qualifiers:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

NR - Not analyzed.

NS - No standard has been developed by the Department.

TABLE 4
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-3				MW-4				MW-5			
		3810-003 7/8/98	152042 8/19/99	327177 01/15/02	354111 06/04/02	WATER 50 ug/L	WATER 5.0 ug/L	WATER 10.0 ug/L	WATER 1.0 ug/L	WATER 340 ug/L	WATER 5.0 ug/L	WATER 2.0 ug/L	WATER 327179 8/19/99 01/15/02 ug/L
VOLATILE COMPOUNDS (GC/MS)													
Chloromethane	30	50	U	2.1 U	3.3 U	NR	0.4 U	0.3 U	2.1 U	0.7 U			
Bromomethane	10	50	U	2.8 U	2.1 U	NR	0.6 U	0.2 U	2.8 U	0.4 U			
VinylChloride	5	50	U	2.2 U	2.3 U	NR	9.1	5	2.2 U	0.5 U			
Chloroethane	NS	332		690	1,500	NR	0.4 U	0.3 U	340	400			
^ MethyleneChloride	3	485		80	40	NR	1.0 U	1 U	5.0 U	2 U			
Trichlorofluoromethane	NS	50	U	1.8 U	3.5 U	NR	0.3 U	0.4 U	1.8 U	0.7 U			
1,1-Dichloroethene	2	50	U	2.4 U	2.4 U	NR	0.9	0.4	2.4 U	0.5 U			
^ 1,1-Dichloroethane	50	461		7.0	12	NR	55	8.1	1.4 U	1.3			
trans-1,2-Dichloroethene	100	50	U	2.2 U	2.2	NR	1.0	0.5	2.2 U	1.2			
^ cis-1,2-Dichloroethene	70	NR		1.8 U	1.8 U	NR	49	21	1.8 U	0.4 U			
Chloroform	6	50	U	1.8 U	1.9 U	NR	0.4 U	0.2 U	1.8 U	0.4 U			
1,2-Dichloroethane	2	50	U	1.4 U	2.1 U	NR	0.3 U	0.2 U	1.4 U	0.4 U			
1,1,1-Trichloroethane	30	50	U	1.5 U	2.6 U	NR	0.3 U	0.3 U	1.5 U	0.5 U			
CarbonTetrachloride	2	50	U	2.2 U	2.5 U	NR	0.4 U	0.2 U	2.2 U	0.5 U			
Bromodichloromethane	1	50	U	1.2 U	1.6 U	NR	0.2 U	0.2 U	1.2 U	0.3 U			
1,2-Dichloropropane	1	50	U	0.7 U	1.6 U	NR	0.1 U	0.2 U	0.7 U	0.3 U			
(1) cis-1,3-Dichloropropene	NS	50	U	1.4 U	1.7 U	NR	0.3 U	0.2 U	1.4 U	0.3 U			
Trichloroethene	1	50	U	1.6 U	3.1 U	NR	0.3 U	2.2	1.6 U	0.6 U			
DibromoChloromethane	10	50	U	1.6 U	1.3 U	NR	0.3 U	0.1 U	1.6 U	0.3 U			
1,1,2-Trichloroethane	3	50	U	1.8 U	2 U	NR	0.3 U	0.2 U	1.8 U	0.4 U			
Benzene	1	25	U	10	30	NR	0.3 U	0.2 U	57	26			
(1) trans-1,3-Dichloropropene	NS	50	U	1.6 U	1.5 U	NR	0.3 U	0.2 U	1.6 U	0.3 U			
2-ChloroethylVinylEther	NS	50	U	2.1 U	4.2 U	NR	0.4 U	0.4 U	2.1 U	0.8 U			
Bromoform	4	50	U	1.6 U	1.8 U	NR	0.3 U	0.2 U	1.6 U	0.4 U			
Tetrachloroethene	1	50	U	0.7 U	2.8 U	NR	0.1 U	0.3 U	0.7 U	0.6 U			
^ 1,1,2,2-Tetrachloroethane	1	50	U	1.6 U	1.2 U	NR	0.3 U	0.1 U	1.6 U	0.2 U			
Toluene	1,000	288		44	93	NR	0.3 U	0.2	7.6	5.7			
^ Chlorobenzene	50	50	U	14	21	NR	0.2 U	0.2 U	13	25			
Ethylbenzene	700	50	U	24	53	NR	0.2 U	0.2 U	48	42			
^ Xylene(Total)	1,000	50	U	22	86	NR	0.3 U	0.2 U	20	33			
^ MTBE	70	NR		1.8 U	1.9 U	NR	0.9	0.2 U	34	3.5			
n-Propanol	NS	NR		500 U	2,500 U	NR	100 U	250 U	500 U	500 U			
Total Confident Conc. VOAs (s)			1566	891	1,837		115.9	37	519.6	538			
Total Estimated Conc. VOA TICs (s)			10,980	3,263	1,063		0	0	1202	645			

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Cri

- (1) Values listed reflect the combined standards for the cis and trans isom
- (2) The Action Levels listed reflect current STL Edison knowledge of the s guidance for the user. Please consult appropriate regulations and cle
- ^ Standard is a revision to the Class IIA ground water quality standard b maximum contaminant level changes and the February 5, 1997 policy

Qualifiers:

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- NR - Not analyzed.
- NS - No standard has been developed by the Department.

TABLE 4
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-6 152045 8/19/99 WATER 5.0 ug/L	MW-7 152046 8/19/99 WATER 1.0 ug/L	PZ-1 327181 01/15/02 WATER 1.0 ug/L	PZ-2 168783 11/11/99 WATER 1.0 ug/L	PZ-3 168784 11/11/99 WATER 1.0 ug/L	PZ-4 179239 1/13/00 WATER 1.0 ug/L	PZ-5 179240 1/13/00 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC/MS)								
Chloromethane	30	2.1 U	0.4 U	0.3 U	0.4 U	0.4 U	0.4 U	0.4 U
Bromomethane	10	2.8 U	0.6 U	0.2 U	0.6 U	0.6 U	0.6 U	0.6 U
VinylChloride	5	2.2 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	NS	440	0.4 U	0.3 U	0.4 U	0.4 U	0.4 U	0.4 U
^ MethyleneChloride	3	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	NS	1.8 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U
1,1-Dichloroethene	2	2.4 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U
^ 1,1-Dichloroethane	50	190	1.0	0.2 U	0.3 U	0.3 U	0.3 U	0.3 U
trans-1,2-Dichloroethene	100	2.2 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U
^ cis-1,2-Dichloroethene	70	2.8	17	0.2 U	0.4 U	3.1	0.4 U	0.4 U
Chloroform	6	1.8 U	0.4 U	0.2 U	0.4 U	0.4 U	0.4 U	16
1,2-Dichloroethane	2	1.4 U	4.2	0.2 U	0.3 U	0.3 U	0.3 U	29
1,1,1-Trichloroethane	30	1.5 U	0.3 U	0.3	0.3 U	0.3 U	0.3 U	0.3 U
CarbonTetrachloride	2	2.2 U	0.4 U	0.2 U	0.4 U	0.4 U	0.4 U	0.4 U
Bromodichloromethane	1	1.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	4.8
1,2-Dichloropropane	1	0.7 U	31	0.2 U	0.1 U	5.9	0.1 U	0.1 U
(1) cis-1,3-Dichloropropene	NS	1.4 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U	0.1 U
Trichloroethene	1	1.6 U	17	0.3 U	0.3 U	1.8	0.3 U	0.3 U
Dibromochloromethane	10	1.6 U	0.3 U	0.1 U	0.3 U	0.3 U	0.3 U	0.8
1,1,2-Trichloroethane	3	1.8 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzene	1	1.6 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U	0.3 U
(1) trans-1,3-Dichloropropene	NS	1.6 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U	0.3 U
2-ChloroethylVinylEther	NS	2.1 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Bromoform	4	1.6 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U	0.3 U
Tetrachloroethene	1	0.7 U	0.1 U	0.3 U	0.1 U	0.1 U	0.1 U	0.1 U
^ 1,1,2,2-Tetrachloroethane	1	1.8 U	0.3 U	0.1 U	0.3 U	0.3 U	0.3 U	0.3 U
Toluene	1,000	1.3 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U	0.3 U
^ Chlorobenzene	50	0.9 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Ethylbenzene	700	1.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
^ Xylene(Total)	1,000	1.8 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U	0.3 U
^ MTBE	70	1.8 U	0.3 U	0.2 U	NR	NR	NR	NR
n-Propanol	NS	500 U	100 U	250 U	NR	NR	NR	NR
Total Confident Conc. VOAs (s)		192.8	70.2	0.3	0	10.8	0	21.6
Total Estimated Conc. VOA TICs (s)		0	0	0	0	0	0	0

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Cri

- (1) Values listed reflect the combined standards for the cis and trans isom
- (2) The Action Levels listed reflect current STL Edelson knowledge of the s guidance for the user. Please consult appropriate regulations and cle
- ^ Standard is a revision to the Class IIA ground water quality standard b maximum contaminant level changes and the February 5, 1997 policy

Qualifiers:

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- NR - Not analyzed.
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TABLE 4
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	PZ-6	PZ-7	PZ-8	GEC-1		GEC-2	GEC-3
		179242 1/13/00 WATER 1.0 ug/L	179243 1/13/00 WATER 1.0 ug/L	179244 1/13/00 WATER 1.0 ug/L	330065 01/30/02 WATER 250.0 ug/L	354107 06/04/02 WATER 1000.0 ug/L	330066 01/30/02 WATER 500.0 ug/L	354110 06/04/02 WATER 200.0 ug/L
VOLATILE COMPOUNDS (GC/MS)								
Chloromethane	30	0.4 U	0.4 U	0.4 U	82 U	430 U	160 U	86 U
Bromomethane	10	0.6 U	0.6 U	0.6 U	52 U	320 U	100 U	64 U
VinylChloride	5	0.5 U	0.5 U	0.5 U	850	290 U	3,800	2,600
Chloroethane	NS	0.4 U	0.4 U	0.4 U	70 U	480 U	10,000	7,300
^ MethyleneChloride	3	1.0 U	1.0 U	1.0 U	50,000	110,000	82,000	19,000
Trichlorofluoromethane	NS	0.3 U	0.3 U	0.3 U	88 U	410 U	180 U	82 U
1,1-Dichloroethene	2	0.5 U	0.5 U	0.5 U	170	290 U	120 U	58 U
^ 1,1-Dichloroethane	50	0.3 U	0.3 U	0.3 U	2,100	3,500	24,000	7,500
trans-1,2-Dichloroethene	100	0.5 U	0.5 U	0.5 U	50 U	230 U	100 U	46 U
^ cis-1,2-Dichloroethene	70	0.4 U	0.4 U	0.4 U	5,400	6,000	44,000	23,000
Chloroform	6	20	0.4 U	0.4 U	48 U	250 U	95 U	50 U
1,2-Dichloroethane	2	0.3 U	0.3 U	0.3 U	560	1,700	100 U	72 U
1,1,1-Trichloroethane	30	0.3 U	0.3 U	0.3 U	670	370	1,600	52 U
CarbonTetrachloride	2	0.4 U	0.4 U	0.4 U	62 U	300 U	120 U	60 U
Bromodichloromethane	1	6.3	0.2 U	0.2 U	40 U	200 U	80 U	40 U
1,2-Dichloropropane	1	0.1 U	0.1 U	0.1 U	4,500	9,100	14,000	4,700
(1) cis-1,3-Dichloropropene	NS	0.3 U	0.3 U	0.3 U	42 U	300 U	85 U	60 U
Trichloroethene	1	0.3 U	0.7	0.3 U	2,000	3,000	500	41
Dibromochloromethane	10	0.9	0.3 U	0.3 U	32 U	270 U	65 U	54 U
1,1,2-Trichloroethane	3	0.3 U	0.3 U	0.3 U	50 U	280 U	100 U	56 U
Benzene	1	0.3 U	0.3 U	0.3 U	48 U	290 U	95 U	58 U
(1) trans-1,3-Dichloropropene	NS	0.3 U	0.3 U	0.3 U	38 U	280 U	75 U	56 U
2-ChloroethylVinylEther	NS	0.4 U	0.4 U	0.4 U	100 U	470 U	210 U	94 U
Bromofom	4	0.3 U	0.3 U	0.3 U	45 U	290 U	90 U	58 U
Tetrachloroethene	1	0.1 U	14	0.1 U	2,700	1,600	140 U	48 U
^ 1,1,2,2-Tetrachloroethane	1	0.3 U	0.3 U	0.3 U	30 U	310 U	60 U	62 U
Toluene	1,000	0.3 U	0.3 U	0.3 U	1,700	2,200	7,200	4,900
^ Chlorobenzene	50	0.2 U	0.2 U	0.2 U	38 U	210 U	75 U	42 U
Ethylbenzene	700	0.2 U	0.2 U	0.2 U	120	150 U	95 U	30 U
^ Xylene(Total)	1,000	0.3 U	0.3 U	0.3 U	570	550	95 U	36 U
^ MTBE	70	NR	NR	NR	48 U	260 U	95 U	52 U
n-Propanol	NS	NR	NR	NR	100,000	500,000 U	120,000 U	100,000 U
Total Confident Conc. VOAs (s)		27.2	14.7	0	171,340	138,020	187,100	69,041
Total Estimated Conc. VOA TICs (s)		0	0	0	41,200	76,300	9,900	22,420

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.

- (1) Values listed reflect the combined standards for the cis and trans isomers.
- (2) The Action Levels listed reflect current STL Edison knowledge of the standard guidance for the user. Please consult appropriate regulations and criteria.
- ^ Standard is a revision to the Class IIA ground water quality standard based on maximum contaminant level changes and the February 5, 1997 policy.

Qualifiers:

- U - The compound was not detected at the indicated concentration.
- J - Data indicates the presence of a compound that meets the identification criteria. The concentration given is an approximate value.
- B - The analyte was found in the laboratory blank as well as the sample. This indicates positive detection.
- NR - Not analyzed.
- NS - No standard has been developed by the Department.

TABLE 4
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-1				MW-2			
		3810-001	152040	327175	354106	3810-002	152041	327176	354111
		7/8/98	8/19/99	01/15/02	06/04/02	WATER	WATER	WATER	WATER
Matrix				50.0	50.0		2.0	1.0	06/04/02
Dilution Factor				ug/L	ug/L		ug/L	ug/L	
Units									
SEMIVOLATILE COMPOUNDS (GC/MS)									
N-Nitrosodimethylamine	20	NR	45	U	32 U	NR	NR	1.7	U
bis(2-Chloroethyl)ether	10	NR	37	U	31 U	NR	NR	1.4	U
1,3-Dichlorobenzene	600	NR	79	U	39 U	NR	NR	3.0	U
1,4-Dichlorobenzene	75	NR	82	U	41 U	NR	NR	3.1	U
1,2-Dichlorobenzene	600	NR	68	U	42 U	NR	NR	2.6	U
bis(2-chloroisopropyl)ether	300	NR	46	U	26 U	NR	NR	1.7	U
N-Nitroso-di-n-propylamine	20	NR	66	U	62 U	NR	NR	2.5	U
Hexachloroethane	10	NR	120	U	44 U	NR	NR	4.6	U
Nitrobenzene	10	NR	27	U	38 U	NR	NR	1.0	U
Isophorone	100	NR	590		38	NR	NR	1.0	U
bis(2-Chlorooxy)methane	NS	NR	44	U	33 U	NR	NR	1.7	U
1,2,4-Trichlorobenzene	9	NR	63	U	39 U	NR	NR	2.4	U
Naphthalene	300	NR	42	U	36	NR	NR	24	
Hexachlorobutadiene	1	NR	100	U	58 U	NR	NR	3.9	U
^ 2-Methylnaphthalene	100	NR	NR		NR	NR	NR	NR	NR
Hexachlorocyclopentadiene	50	NR	66	U	85 U	NR	NR	2.5	U
2-Chloronaphthalene	NS	NR	30	U	41 U	NR	NR	1.2	U
Dimethylphthalate	NS	NR	27	U	28 U	NR	NR	1.0	U
Acenaphthylene	NS	NR	50	U	30 U	NR	NR	1.9	U
(1) 2,6-Dinitrotoluene	NS	NR	39	U	20 U	NR	NR	1.5	U
Acenaphthene	400	NR	47	U	29 U	NR	NR	1.8	U
(1) 2,4-Dinitrotoluene	10	NR	46	U	13 U	NR	NR	1.8	U
Diethylphthalate	5,000	NR	470		410	NR	NR	2.0	
4-Chlorophenyl-phenylether	NS	NR	47	U	43 U	NR	NR	1.8	U
Fluorene	300	NR	34	U	31 U	NR	NR	1.3	U
N-Nitrosodiphenylamine	20	NR	22	U	26 U	NR	NR	0.8	U
4-Bromophenyl-phenylether	NS	NR	37	U	98 U	NR	NR	1.4	U
Hexachlorobenzene	10	NR	36	U	57 U	NR	NR	1.4	U
Phenanthrene	NS	NR	29	U	25 U	NR	NR	1.1	U
Anthracene	2,000	NR	33	U	21 U	NR	NR	1.2	U
Di-n-butylphthalate	900	NR	35	U	21 U	NR	NR	1.3	U
Fluoranthene	300	NR	34	U	21 U	NR	NR	1.3	U
Pyrene	200	NR	37	U	21 U	NR	NR	1.4	U
Benzidine	50	NR	320	U	1,200 U	NR	NR	12	U
Butylbenzylphthalate	100	NR	29	U	20 U	NR	NR	1.1	U
3,3'-Dichlorobenzidine	60	NR	190	U	66 U	NR	NR	7.4	U
Benz(a)anthracene	NS	NR	30	U	19 U	NR	NR	1.2	U
Chrysene	NS	NR	40	U	25 U	NR	NR	1.6	U
bis(2-Ethylhexyl)phthalate	30	NR	230	U	22 U	NR	NR	48	
Di-n-octylphthalate	100	NR	24	U	6.6 U	NR	NR	0.9	U
Benz(b)fluoranthene	NS	NR	30	U	14 U	NR	NR	1.2	U
Benz(k)fluoranthene	NS	NR	37	U	42 U	NR	NR	1.4	U
Benz(a)pyrene	NS	NR	34	U	7.6 U	NR	NR	1.3	U
Indeno(1,2,3-cd)pyrene	NS	NR	42	U	7.1 U	NR	NR	1.6	U
Dibenz(a,h)anthracene	NS	NR	37	U	32 U	NR	NR	1.4	U
Benz(g,h,i)perylene	NS	NR	47	U	18 U	NR	NR	1.8	U
Total Confident Conc. BNAs (s)			1,060		484			74	14
Total Estimated Conc. BNA TICs (s)			196,690		177,080			6740	554

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

(2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.

^ A Value is a revision to the Class IIA ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.

Qualifiers:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero.

The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

NR - Not analyzed.

NS - No standard has been developed by the Department.

TABLE 4
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-3				MW-4		MW-5		
		3810-003 7/8/98	152042 8/19/99	327177 01/15/02	354111 06/04/02	152043 8/19/99	327180 01/15/02	152044 8/19/99	327179 01/15/02	
		WATER 1 ug/L	WATER 2.0 ug/L	WATER 1.0 ug/L	WATER 1.0 ug/L	WATER 1.0 ug/L	WATER 2.0 ug/L	WATER 5.0 ug/L	WATER 1.0 ug/L	
SEMOVOLATILE COMPOUNDS (GC/MS)										
	N-Nitrosodimethylamine	20	2 U	1.8 U	0.6 U	NR	0.8 U	0.7 U	1.7 U	3.3 U
	bis(2-Chloroethyl)ether	10	2 U	1.5 U	0.6 U	NR	0.7 U	0.6 U	1.4 U	3.2 U
	1,3-Dichlorobenzene	600	2 U	3.2 U	0.8 U	NR	1.5 U	0.8 U	3.0 U	4.0 U
	1,4-Dichlorobenzene	75	2 U	3.3 U	0.8 U	NR	1.5 U	0.9 U	3.2 U	4.2 U
	1,2-Dichlorobenzene	600	2 U	2.8 U	0.9 U	NR	1.3 U	0.9 U	2.6 U	4.4 U
	bis(2-chloroisopropyl)ether	300	2 U	1.8 U	0.5 U	NR	0.9 U	0.5 U	1.8 U	-2.6 U
	N-Nitroso-di-n-propylamine	20	2 U	2.6 U	1.2 U	NR	1.2 U	1.3 U	2.5 U	6.4 U
	Hexachloroethane	10	2 U	4.9 U	0.9 U	NR	2.3 U	0.9 U	4.7 U	4.5 U
	Nitrobenzene	10	2 U	1.1 U	0.8 U	NR	0.5 U	0.8 U	1.0 U	3.9 U
	Isophorone	100	2 U	3.8	0.2 U	NR	0.5 U	0.2 U	7.1	2.0
	bis(2-Chloroethoxy)methane	NS	2 U	1.8 U	0.7 U	NR	0.8 U	0.7 U	1.7 U	3.4 U
	1,2,4-Trichlorobenzene	9	2 U	2.5 U	0.8 U	NR	1.2 U	0.8 U	2.4 U	4.0 U
(1)	^ Naphthalene	300	5.68	1.8	1.6	NR	0.8 U	0.7 U	43	83
	Hexachlorobutadiene	1	2 U	4.1 U	1.2 U	NR	1.9 U	1.2 U	3.9 U	6 U
	^ 2-Methylnaphthalene	100	8.27	NR	NR	NR	NR	NR	NR	NR
	Hexachlorocyclopentadiene	50	2 U	2.7 U	1.7 U	NR	1.2 U	1.8 U	2.6 U	8.8 U
	2-Chloronaphthalene	NS	2 U	1.2 U	0.8 U	NR	0.6 U	0.8 U	1.2 U	4.2 U
	Dimethylphthalate	NS	2 U	1.1 U	0.6 U	NR	0.5 U	0.6 U	1.0 U	2.8 U
	Acenaphthylene	NS	2 U	2.0 U	0.6 U	NR	0.9 U	0.6 U	2.0 U	3.0 U
	2,6-Dinitrotoluene	NS	2 U	1.6 U	0.4 U	NR	0.7 U	0.4 U	1.5 U	2.1 U
	Acenaphthene	400	2 U	1.9 U	0.6 U	NR	0.9 U	0.6 U	3.2	3.0 U
	2,4-Dinitrotoluene	10	2 U	1.9 U	0.3 U	NR	0.9 U	0.3 U	1.8 U	1.3 U
(1)	Diethylphthalate	5,000	3.49	1.4	1.8	NR	0.5 U	0.5 U	1.0 U	2.3 U
	4-Chlorophenyl-phenylether	NS	2 U	1.9 U	0.9 U	NR	0.9 U	0.9 U	1.8 U	4.4 U
	Fluorene	300	2 U	1.4 U	0.7	NR	0.6 U	0.6 U	3.3	3.2 U
	N-Nitrosodiphenylamine	20	2 U	0.9 U	0.5 U	NR	0.4 U	0.6 U	0.8 U	2.7 U
	4-Bromophenyl-phenylether	NS	2 U	1.5 U	2 U	NR	0.7 U	2.0 U	1.4 U	10 U
	Hexachlorobenzene	10	2 U	1.4 U	1.1 U	NR	0.7 U	1.2 U	1.4 U	5.8 U
	Phenanthrene	NS	2.23	1.3	0.8	NR	0.6 U	0.5 U	2.6	2.6 U
	Anthracene	2,000	2 U	1.3 U	0.4 U	NR	0.6 U	0.4 U	1.3 U	2.2 U
	Di-n-butylphthalate	900	2 U	1.4 U	0.4 U	NR	0.7 U	0.4 U	1.4 U	2.2 U
	Fluoranthene	300	2 U	1.4 U	0.4 U	NR	0.6 U	0.4 U	1.3 U	2.2 U
(1)	Pyrene	200	2 U	1.5 U	0.4 U	NR	0.7 U	0.4 U	1.4 U	2.2 U
	Benzidine	50	2 U	13 U	25 U	NR	6.0 U	26 U	12 U	130 U
	Butylbenzylphthalate	100	2 U	1.2 U	0.4 U	NR	0.5 U	0.4 U	1.1 U	2.1 U
	3,3'-Dichlorobenzidine	60	2 U	7.9 U	1.3 U	NR	3.6 U	1.4 U	7.5 U	6.8 U
	Benz(a)anthracene	NS	2 U	1.2 U	0.4 U	NR	0.6 U	0.4 U	1.2 U	2.0 U
	Chrysene	NS	2 U	1.6 U	0.5 U	NR	0.8 U	0.5 U	1.6 U	2.6 U
	bis(2-Ethylhexyl)phthalate	30	2 U	9.2 U	1.2 B	NR	9.4	0.6 B	8.8 U	2.3 U
	Di-n-octylphthalate	100	2 U	1.0 U	0.1 U	NR	0.4 U	0.1 U	0.9 U	0.7 U
	Benz(b)fluoranthene	NS	2 U	1.2 U	0.3 U	NR	0.6 U	0.3 U	1.2 U	1.4 U
	Benz(k)fluoranthene	NS	2 U	1.5 U	0.8 U	NR	0.7 U	0.9 U	1.4 U	4.3 U
(1)	Benz(a)pyrene	NS	2 U	1.4 U	0.2 U	NR	0.6 U	0.2 U	1.3 U	0.8 U
	Indeno(1,2,3-cd)pyrene	NS	2 U	1.7 U	0.1 U	NR	0.8 U	0.2 U	1.6 U	0.7 U
	Dibenz(a,h)anthracene	NS	2 U	1.5 U	0.6 U	NR	0.7 U	0.7 U	1.4 U	3.3 U
	Benz(g,h,i)perylene	NS	2 U	1.9 U	0.4 U	NR	0.9 U	0.4 U	1.8 U	1.8 U
	Total Confident Conc. BNAs (s)		19.67	8.3	4.9		9.4	0	59.2	85
Total Estimated Conc. BNA TICs (s)			5481.6	3227	958		0	0	2034	1670

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.

(1) Values listed reflect the combined standards for the cis and trans isom.

(2) The Action Levels listed reflect current STL Edison knowledge of the standards and guidance for the user. Please consult appropriate regulations and clearances.

^ Value is a revision to the Class IIA ground water quality standard based on maximum contaminant level changes and the February 5, 1997 policy.

Qualifiers:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The concentration given is an approximate value.

B - The analysis was found in the laboratory blank as well as the sample. This indicates no contamination.

NR - Not analyzed.

NS - No standard has been developed by the Department.

TABLE 4
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-6	MW-7	PZ-1	PZ-2	PZ-3	PZ-4	PZ-5
Lab Sample Number		152045 8/19/99	152046 8/19/99	327181 01/15/02	168783 11/11/99	168784 11/11/99	179239 1/13/00	179240 1/13/00
Sampling Date		Matrix	WATER	WATER	WATER	WATER	WATER	WATER
Matrix		Dilution Factor	1.0	1.0	1.0			
Units		ug/L	ug/L	ug/L				
SEMOVOLATILE COMPOUNDS (GC/MS)								
	N-Nitrosodimethylamine	20	0.9 U	0.8 U	0.7 U	NR	NR	NR
	bis(2-Chloroethyl)ether	10	0.7 U	0.7 U	0.7 U	NR	NR	NR
	1,3-Dichlorobenzene	600	1.5 U	1.4 U	0.8 U	NR	NR	NR
	1,4-Dichlorobenzene	75	1.6 U	1.5 U	0.9 U	NR	NR	NR
	1,2-Dichlorobenzene	600	1.3 U	1.2 U	0.9 U	NR	NR	NR
	bis(2-chloroisopropyl)ether	300	0.9 U	0.8 U	0.5 U	NR	NR	NR
	N-Nitroso-di-n-propylamine	20	1.2 U	1.2 U	1.3 U	NR	NR	NR
	Hexachloroethane	10	2.3 U	2.2 U	0.9 U	NR	NR	NR
	Nitrobenzene	10	0.5 U	0.5 U	0.8 U	NR	NR	NR
	Isophorone	100	0.5 U	0.5 U	0.2 U	NR	NR	NR
	bis(2-Chloroethoxy)methane	NS	0.8 U	0.8 U	0.7 U	NR	NR	NR
	1,2,4-Trichlorobenzene	9	1.2 U	1.1 U	0.8 U	NR	NR	NR
	[▲] Naphthalene	300	0.8 U	0.8 U	0.7 U	NR	NR	NR
	Hexachlorobutadiene	1	1.9 U	1.8 U	1.2 U	NR	NR	NR
(1)	[▲] 2-Methylnaphthalene	100	NR	NR	NR	NR	NR	NR
	Hexachlorocyclopentadiene	50	1.2 U	1.2 U	1.8 U	NR	NR	NR
	2-Chloronaphthalene	NS	0.6 U	0.6 U	0.9 U	NR	NR	NR
	Dimethylphthalate	NS	0.5 U	0.5 U	0.6 U	NR	NR	NR
	Acenaphthylene	NS	1.0 U	0.9 U	0.6 U	NR	NR	NR
(1)	2,6-Dinitrotoluene	NS	0.7 U	0.7 U	0.4 U	NR	NR	NR
	Acenaphthene	400	0.9 U	0.9 U	0.6 U	NR	NR	NR
(1)	2,4-Dinitrotoluene	10	0.9 U	0.8 U	0.3 U	NR	NR	NR
	Diethylphthalate	5,000	0.5 U	0.5 U	0.5 U	NR	NR	NR
	4-Chlorophenyl-phenylether	NS	0.8 U	0.8 U	0.9 U	NR	NR	NR
	Fluorene	300	0.6 U	0.6 U	0.7 U	NR	NR	NR
	N-Nitrosodiphenylamine	20	0.4 U	0.4 U	0.6 U	NR	NR	NR
	4-Bromophenyl-phenylether	NS	0.7 U	0.7 U	2.1 U	NR	NR	NR
	Hexachlorobenzene	10	0.7 U	0.6 U	1.2 U	NR	NR	NR
	Phenanthrene	NS	0.6 U	0.5 U	0.5 U	NR	NR	NR
	Anthracene	2,000	0.6 U	0.6 U	0.5 U	NR	NR	NR
	Di-n-butylphthalate	900	0.7 U	0.9	0.5 U	NR	NR	NR
	Fluoranthene	300	0.6 U	0.6 U	0.4 U	NR	NR	NR
	Pyrene	200	0.7 U	0.7 U	0.5 U	NR	NR	NR
	Benzidine	50	6.0 U	5.8 U	27 U	NR	NR	NR
	Butylbenzylphthalate	100	0.5 U	0.5 U	0.4 U	NR	NR	NR
	3,3'-Dichlorobenzidine	60	3.7 U	3.5 U	1.4 U	NR	NR	NR
	Benzo(a)anthracene	NS	0.6 U	0.6 U	0.4 U	NR	NR	NR
	Chrysene	NS	0.8 U	0.7 U	0.5 U	NR	NR	NR
	bis(2-Ethyhexyl)phthalate	30	4.3 U	4.1 U	1.7 B	NR	NR	NR
	Di-n-octylphthalate	100	0.5 U	0.4 U	0.1 U	NR	NR	NR
	Benzo(b)fluoranthene	NS	0.6 U	0.6 U	0.3 U	NR	NR	NR
	Benzo(k)fluoranthene	NS	0.7 U	0.7 U	0.9 U	NR	NR	NR
	Benzo(a)pyrene	NS	0.7 U	0.6 U	0.2 U	NR	NR	NR
	Indeno(1,2,3-cd)pyrene	NS	0.8 U	0.8 U	0.2 U	NR	NR	NR
	Dibenz(a,h)anthracene	NS	0.7 U	0.7 U	0.7 U	NR	NR	NR
	Benzo(q,h,i)perylene	NS	0.9 U	0.9 U	0.4 U	NR	NR	NR
Total Confident Conc. BNAs (s)		0	0.9	0				
Total Estimated Conc. BNA TICs (s)		12	12	0				

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.

(1) Values listed reflect the combined standards for the cis and trans Isom.

(2) The Action Levels listed reflect current STL Edison knowledge of the guidance for the user. Please consult appropriate regulations and cler.

[▲] Value is a revision to the Class IIA ground water quality standard based on maximum contaminant level changes and the February 5, 1997 policy.

Qualifiers:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates no analyte.

NR - Not analyzed.

NS - No standard has been developed by the Department.

TABLE 4
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	PZ-6	PZ-7	PZ-8	GEC-1	GEC-2	GEC-3		
		179242 1/13/00 WATER	179243 1/13/00 WATER	179244 1/13/00 WATER	330065 01/30/02 WATER 100.0 ug/L	354107 06/04/02 WATER 100.0 ug/L	330066 01/30/02 WATER 200.0 ug/L	354110 06/04/02 WATER 100.0 ug/L	
SEMOVOLATILE COMPOUNDS (GC/MS)									
N-Nitrosodimethylamine	20	NR	NR	NR	66 U	83 U	130 U	69 U	0.6 U
bis(2-Chloroethyl)ether	10	NR	NR	NR	64 U	80 U	120 U	67 U	0.6 U
1,3-Dichlorobenzene	600	NR	NR	NR	81 U	100 U	160 U	84 U	0.8 U
1,4-Dichlorobenzene	75	NR	NR	NR	85 U	110 U	170 U	89 U	0.8 U
1,2-Dichlorobenzene	600	NR	NR	NR	88 U	110 U	170 U	92 U	0.8 U
bis(2-chloroisopropyl)ether	300	NR	NR	NR	53 U	67 U	100 U	56 U	0.5 U
N-Nitroso-di-n-propylamine	20	NR	NR	NR	130 U	160 U	250 U	140 U	1.2 U
Hexachloroethane	10	NR	NR	NR	91 U	110 U	180 U	96 U	0.9 U
Nitrobenzene	10	NR	NR	NR	80 U	100 U	160 U	83 U	0.8 U
Isophorone	100	NR	NR	NR	10,000	14,000	46 U	24 U	0.2 U
bis(2-Chloroethoxy)methane	NS	NR	NR	NR	68 U	85 U	130 U	71 U	0.7 U
1,2,4-Trichlorobenzene	9	NR	NR	NR	81 U	100 U	160 U	84 U	0.8 U
▲ Naphthalene	300	NR	NR	NR	67 U	84 U	130 U	100	0.6 U
Hexachlorobutadiene	1	NR	NR	NR	120 U	150 U	240 U	130 U	1.2 U
▲ 2-Methylnaphthalene	100	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclopentadiene	50	NR	NR	NR	180 U	220 U	350 U	180 U	1.7 U
2-Chloronaphthalene	NS	NR	NR	NR	85 U	110 U	170 U	89 U	0.8 U
Dimethylphthalate	NS	NR	NR	NR	57 U	72 U	110 U	60 U	0.6 U
Acenaphthylene	NS	NR	NR	NR	62 U	77 U	120 U	64 U	0.6 U
(1) 2,6-Dinitrotoluene	NS	NR	NR	NR	42 U	53 U	83 U	44 U	0.4 U
Acenaphthene	400	NR	NR	NR	61 U	76 U	120 U	63 U	0.6 U
(1) 2,4-Dinitrotoluene	10	NR	NR	NR	26 U	33 U	52 U	28 U	0.3 U
Diethylphthalate	5,000	NR	NR	NR	8,000	5,300	37,000	22,000	0.4
4-Chlorophenyl-phenylether	NS	NR	NR	NR	89 U	110 U	180 U	93 U	0.9 U
Fluorene	300	NR	NR	NR	65 U	81 U	130 U	68 U	0.6 U
N-Nitrosodiphenylamine	20	NR	NR	NR	55 U	69 U	110 U	58 U	0.5 U
4-Bromophenyl-phenylether	NS	NR	NR	NR	200 U	260 U	400 U	210 U	2 U
Hexachlorobenzene	10	NR	NR	NR	120 U	150 U	230 U	120 U	1.1 U
Phenanthrene	NS	NR	NR	NR	52 U	65 U	100 U	54 U	0.5 U
Anthracene	2,000	NR	NR	NR	45 U	56 U	88 U	47 U	0.4 U
Di-n-butylphthalate	900	NR	NR	NR	45 U	56 U	88 U	47 U	4.9
Fluoranthene	300	NR	NR	NR	44 U	55 U	85 U	46 U	0.4 U
Pyrene	200	NR	NR	NR	45 U	56 U	88 U	47 U	0.4 U
Benzidine	50	NR	NR	NR	2,600 U	3,300 U	5,100 U	2,700 U	25 U
Butylbenzylphthalate	100	NR	NR	NR	42 U	53 U	83 U	44 U	0.4 U
3,3'-Dichlorobenzidine	60	NR	NR	NR	140 U	170 U	270 U	140 U	1.3 U
Benz(a)anthracene	NS	NR	NR	NR	40 U	51 U	79 U	42 U	0.4 U
Chrysene	NS	NR	NR	NR	52 U	65 U	100 U	54 U	0.5 U
bis(2-Ethylhexyl)phthalate	30	NR	NR	NR	47 U	59 U	92 U	49 U	2.2
Di-n-octylphthalate	100	NR	NR	NR	14 U	17 U	27 U	14 U	0.1 U
Benz(b)fluoranthene	NS	NR	NR	NR	29 U	36 U	56 U	30 U	0.3 U
Benz(k)fluoranthene	NS	NR	NR	NR	87 U	110 U	170 U	91 U	0.8 U
Benz(a)pyrene	NS	NR	NR	NR	16 U	20 U	31 U	17 U	0.2 U
Indeno(1,2,3-cd)pyrene	NS	NR	NR	NR	15 U	19 U	29 U	16 U	0.1 U
Dibenz(a,h)anthracene	NS	NR	NR	NR	67 U	84 U	130 U	70 U	0.6 U
Benz(g,h,i)perylene	NS	NR	NR	NR	37 U	47 U	73 U	39 U	0.4 U
Total Confident Conc. BNAs (s)					18,000	19,300	37,000	22,100	7.5
Total Estimated Conc. BNA TICs (s)					275,700	319,100	151,200	73,970	59

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.
 (1) Values listed reflect the combined standards for the cis and trans isomeric forms.
 (2) The Action Levels listed reflect current STL Edison knowledge of the site's guidance for the user. Please consult appropriate regulations and codes.
 ^ A value is a revision to the Class IIA ground water quality standard based on maximum contaminant level changes and the February 5, 1997 policy.

Qualifiers:

- U - The compound was not detected at the indicated concentration.
- J - Data indicates the presence of a compound that meets the identification criteria. The concentration given is an approximate value.
- B - The analyte was found in the laboratory blank as well as the sample. This indicates poor analytical quality.
- NR - Not analyzed.
- NS - No standard has been developed by the Department.

TABLE 4
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria	MW-1					MW-2				
		3810-001 7/8/98 WATER	152040 8/19/99 WATER	327175 01/15/02 WATER	354106 06/04/02 WATER	NA/NA/NA mg/l	100.0/NA/NA ug/L	3810-002 7/8/98 WATER	152041 8/19/99 WATER	327176 01/15/02 WATER	354111 06/04/02 WATER
WET CHEMISTRY											
Total Dissolved Solids - mg/l	500,000	NR	NR	1980	NR	NR	NR	NR	497	NR	
METHANE, ETHANE, ETHENE											
Methane	NS	NR	NR	NR	NR	5500	NR	NR	NR	1,600	
Ethene	NS	NR	NR	NR	NR	500 U	NR	NR	NR	120 U	
^ Ethane	100	NR	NR	NR	NR	500 U	NR	NR	NR	120 U	
METALS ANALYSIS											
Iron	300	NR	NR	NR	NR	47200	NR	NR	NR	683,000	
Manganese	50	NR	NR	NR	NR	2680	NR	NR	NR	3,950	
NITRATE											
Nitrate	10,000	NR	NR	NR	NR	100 U	NR	NR	NR	100 U	
SULFATE											
Sulfate	250,000	NR	NR	NR	NR	5000 U	NR	NR	NR	16,000	

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.

^ A value is a revision to the Class IIA ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.

Qualifiers:

U - The compound was not detected at the indicated concentration.

NR - Not analyzed.

NA - Not applicable.

NS - No standard has been developed by the Department.

TABLE 4
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria	MW-3				MW-4				MW-5			
		3810-003 7/8/98	152042 8/19/99	327177 01/15/02	354112 06/04/02	152043 8/19/99	327180 01/15/02	152044 8/19/99	327179 01/15/02	WATER	WATER	WATER	NA/NA/NA mg/l
Dilution Factor (M,E,E / Nitrate / Sulfate) Units	ug/l except as noted					100.0/NA/NA ug/L							
WET CHEMISTRY													
Total Dissolved Solids - mg/l	500,000	NR	NR	1480	NR	NR	895	NR	1260				
METHANE, ETHANE, ETHENE													
Methane	NS	NR	NR	NR	NR	NR	NR	NR	NR				
Ethene	NS	NR	NR	NR	NR	NR	NR	NR	NR				
^ Ethane	100	NR	NR	NR	NR	500 U	NR	NR	NR				
METALS ANALYSIS													
Iron	300	NR	NR	NR	NR	122,000	NR	NR	NR				
Manganese	50	NR	NR	NR	NR	7,310	NR	NR	NR				
NITRATE													
Nitrate	10,000	NR	NR	NR	NR	100 U	NR	NR	NR				
SULFATE													
Sulfate	250,000	NR	NR	NR	NR	10,500	NR	NR	NR				

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.

^ A Value is a revision to the Class IIA ground water quality standard based on maximum contaminant level changes and the February 5, 1997 policy.

Qualifiers:

U - The compound was not detected at the indicated concentration.

NR - Not analyzed.

NA - Not applicable.

NS - No standard has been developed by the Department.

TABLE 4
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor (M,E,E / Nitrate / Sulfate) Units	New Jersey Higher of PQLs and Ground Water Quality Criteria ug/l except as noted	MW-6	MW-7	PZ-1	PZ-2	PZ-3	PZ-4	PZ-5
		152045 8/19/99 WATER	152046 8/19/99 WATER	327181 01/15/02 NA/NA/NA mg/l	168783 11/11/99 WATER 1.0/NA/NA ug/L	168784 11/11/99 WATER 1.0/NA/NA ug/L	179239 1/13/00 WATER 1.0/1.0/2.0 ug/L	179240 1/13/00 WATER 1.0/1.0/1.0 ug/L
WET CHEMISTRY								
Total Dissolved Solids - mg/l	500,000	NR	NR	525	NR	NR	NR	NR
METHANE, ETHANE, ETHENE								
Methane	NS	NR	NR	NR	NR	NR	5.9	9.0
Ethene	NS	NR	NR	NR	5.0 U	5.0 U	5.0 U	5.0 U
^ Ethane	100	NR	NR	NR	5.0 U	5.0 U	5.0 U	5.0 U
METALS ANALYSIS								
Iron	300	NR	NR	NR	NR	NR	156,000	142,000
Manganese	50	NR	NR	NR	NR	NR	NR	NR
NITRATE								
Nitrate	10,000	NR	NR	NR	NR	NR	600	830
SULFATE								
Sulfate	250,000	NR	NR	NR	NR	NR	61,200	38,200
								71,500

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Cri

^ A Value is a revision to the Class IIA ground water quality standard based on maximum contaminant level changes and the February 5, 1997 policy

Qualifiers:

U - The compound was not detected at the indicated concentration.

NR - Not analyzed.

NA - Not applicable.

NS - No standard has been developed by the Department.

TABLE 4
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria	PZ-6 179242 1/13/00 WATER 1.0/1.0/2.0 ug/l except as noted	PZ-7 179243 1/13/00 WATER 1.0/1.0/2.0 ug/l	PZ-8 179244 1/13/00 WATER 2.0/1.0/2.0 ug/l	GEC-1 330065 01/30/02 WATER 100.0/NA/NA ug/l	GEC-2 354107 06/04/02 WATER NA/NA/NA mg/l	GEC-3 330066 01/30/02 WATER 10.0/NA/NA ug/l	GEC-3 330067 01/30/02 WATER NA/NA/NA mg/l
WET CHEMISTRY								
Total Dissolved Solids - mg/l	500,000	NR	NR	NR	NR	2240	NR	358
METHANE, ETHANE, ETHENE								
Methane	NS	26	32	100	9,400	NR	1,200	
Ethene	NS	5.0	U	10	500 U	NR	150	
^ Ethane	100	5.0	U	10	500 U	NR	50 U	NR
METALS ANALYSIS								
Iron	300	842,000	1,040,000	158,000	910,000	NR	469,000	NR
Manganese	50	NR	NR	NR	56,400	NR	9,620	NR
NITRATE								
Nitrate	10,000	150	150	490	100 U	NR	100 U	NR
SULFATE								
Sulfate	250,000	58,800	38,800	45,200	NR	33,800	NR	5,000 U

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.

^ Value is a revision to the Class IIA ground water quality standard based on maximum contaminant level changes and the February 5, 1997 policy.

Qualifiers:

U - The compound was not detected at the indicated concentration.

NR - Not analyzed.

NA - Not applicable.

NS - No standard has been developed by the Department.

APPENDIX A:
Laboratory Certificates of Analysis

06/27/2002

Goldman Environmental Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184

Attention: Mr. Parrish Smolcha

STL Edison
777 New Durham Road
Edison, NJ 08817

Tel: 732-549-3900
Fax: 732-549-3679
www.stl-inc.com

Laboratory Results
Job No. X045 - Elco Chemical

Dear Mr. Smolcha:

Enclosed are the results you requested for the following sample(s) received at our laboratory on June 4, 2002.

<u>Lab No.</u>	<u>Client ID</u>	<u>Analysis Required</u>
354106	MW-1	3810-Methane,Ethane,Ethene Fe Mn Nitrate Sulfate
354107	GEC-1	PPVOA+10w/n-Propanol,MTBE 3810-Methane,Ethane,Ethene PP BN+15 Fe Mn Nitrate Sulfate
354108	Field_Blank	PPVOA+10w/n-Propanol,MTBE 3810-Methane,Ethane,Ethene PP BN+15 Fe Mn Nitrate Sulfate
354109	Trip_Blank	PPVOA+10w/n-Propanol,MTBE 3810-Methane,Ethane,Ethene



STL Edison is a part of Severn Trent Laboratories, Inc.

STL Edison
777 New Durham Road
Edison, NJ 08817

Tel: 732-549-3900
Fax: 732-549-3679
www.stl-inc.com

Laboratory Results
Job No. X045 - Elco Chemical (cont'd)

<u>Lab No.</u>	<u>Client ID</u>	<u>Analysis Required</u>
354110	GEC-2	PPVOA+10w/n-Propanol,MTBE 3810-Methane,Ethane,Ethene PP BN+15 Fe Mn Nitrate Sulfate
354111	MW-2	3810-Methane,Ethane,Ethene Fe Mn Nitrate Sulfate
354112	MW-3	3810-Methane,Ethane,Ethene Fe Mn Nitrate



STL Edison is a part of Severn Trent Laboratories, Inc.

STL Edison
777 New Durham Road
Edison, NJ 08817

Tel: 732-549-3900
Fax: 732-549-3679
www.stl-inc.com

Laboratory Results
Job No. X045 - Elco Chemical (cont'd)

Lab No.

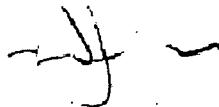
Client ID

Analysis Required

Sulfate

An invoice for our services is also enclosed. If you have any questions please contact your Project Manager, Randy Wolfe, at (732) 549-3900.

Very Truly Yours,



Michael J. Urban
Laboratory Manager



STL Edison is a part of Severn Trent Laboratories, Inc.

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Analytical Results Summary

Client ID: GEC-1
Site: Elco Chemical

Lab Sample No: 354107
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Analyzed: 06/10/02
GC Column: DB624
Instrument ID: VOAMS4.i
Lab File ID: d27254.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 1000.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Chloromethane	ND	430
Bromomethane	ND	320
Vinyl Chloride	ND	290
Chloroethane	ND	480
Methylene Chloride	110000	880
Trichlorofluoromethane	ND	410
1,1-Dichloroethene	ND	290
1,1-Dichloroethane	3500	270
trans-1,2-Dichloroethene	ND	230
cis-1,2-Dichloroethene	6000	310
Chloroform	ND	250
1,2-Dichloroethane	1700	360
1,1,1-Trichloroethane	370	260
Carbon Tetrachloride	ND	300
Bromodichloromethane	ND	200
1,2-Dichloropropane	9100	350
cis-1,3-Dichloropropene	ND	300
Trichloroethene	3000	120
Dibromochloromethane	ND	270
1,1,2-Trichloroethane	ND	280
Benzene	ND	290
trans-1,3-Dichloropropene	ND	280
2-Chloroethyl Vinyl Ether	ND	470
Bromoform	ND	290
Tetrachloroethene	1600	240
1,1,2,2-Tetrachloroethane	ND	310
Toluene	2200	240
Chlorobenzene	ND	210
Ethylbenzene	ND	150
Xylene (Total)	550	180
MTBE	ND	260
n-Propanol	ND	500000

Client ID: GEC-1
Site: Elco Chemical

Lab Sample No: 354107
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Analyzed: 06/10/02
GC Column: DB624
Instrument ID: VOAMS4.i
Lab File ID: d27254.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 1000.0

VOLATILE ORGANICS - GC/MS
TENTATIVELY IDENTIFIED COMPOUNDS
METHOD 624

COMPOUND NAME	RT	EST. CONC. ug/l	Q
1. 2-Propanol	5.58	7800	
2. 2-Pentanone, 4-methyl-	11.14	6900	
3. Unknown Alcohol	11.55	6400	
4. C9H18O Ketone	14.80	12000	
5. Cyclohexanone, 3,3,5-trimethyl-	16.29	34000	
6. C10H16 Aromatic	18.42	9200	
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
25.			
26.			
27.			
28.			
29.			
30.			
TOTAL ESTIMATED CONCENTRATION		76300	

Client ID: **Field_Blank**
Site: Elco Chemical

Lab Sample No: **354108**
Lab Job No: **X045**

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Analyzed: 06/08/02
GC Column: DB624
Instrument ID: VOAMS4.i
Lab File ID: d27230.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Chloromethane	ND	0.4
Bromomethane	ND	0.3
Vinyl Chloride	ND	0.3
Chloroethane	ND	0.5
Methylene Chloride	ND	0.9
Trichlorofluoromethane	ND	0.4
1,1-Dichloroethene	ND	0.3
1,1-Dichloroethane	ND	0.3
trans-1,2-Dichloroethene	ND	0.2
cis-1,2-Dichloroethene	ND	0.3
Chloroform	ND	0.2
1,2-Dichloroethane	ND	0.4
1,1,1-Trichloroethane	ND	0.3
Carbon Tetrachloride	ND	0.3
Bromodichloromethane	ND	0.2
1,2-Dichloropropane	ND	0.4
cis-1,3-Dichloropropene	ND	0.3
Trichloroethene	ND	0.1
Dibromochloromethane	ND	0.3
1,1,2-Trichloroethane	ND	0.3
Benzene	ND	0.3
trans-1,3-Dichloropropene	ND	0.3
2-Chloroethyl Vinyl Ether	ND	0.5
Bromoform	ND	0.3
Tetrachloroethene	ND	0.2
1,1,2,2-Tetrachloroethane	ND	0.3
Toluene	ND	0.2
Chlorobenzene	ND	0.2
Ethylbenzene	ND	0.2
Xylene (Total)	ND	0.2
MTBE	ND	0.3
n-Propanol	ND	500

Client ID: Field Blank
Site: Elco Chemical

Lab Sample No: 354108
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Analyzed: 06/08/02
GC Column: DB624
Instrument ID: VOAMS4.i
Lab File ID: d27230.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/MS
TENTATIVELY IDENTIFIED COMPOUNDS
METHOD 624

COMPOUND NAME	RT	EST. CONC. ug/l	Q
1. NO VOLATILE ORGANIC COMPOUNDS FOUND			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
25.			
26.			
27.			
28.			
29.			
30.			
TOTAL ESTIMATED CONCENTRATION		0.0	

Client ID: Trip Blank
Site: Elco Chemical

Lab Sample No: 354109
Lab Job No: X045

Date Sampled: 06/03/02
Date Received: 06/04/02
Date Analyzed: 06/08/02
GC Column: DB624
Instrument ID: VOAMS4.i
Lab File ID: d27231.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Chloromethane	ND	0.4
Bromomethane	ND	0.3
Vinyl Chloride	ND	0.3
Chloroethane	ND	0.5
Methylene Chloride	ND	0.9
Trichlorofluoromethane	ND	0.4
1,1-Dichloroethene	ND	0.3
1,1-Dichloroethane	ND	0.3
trans-1,2-Dichloroethene	ND	0.2
cis-1,2-Dichloroethene	ND	0.2
Chloroform	ND	0.4
1,2-Dichloroethane	ND	0.3
1,1,1-Trichloroethane	ND	0.3
Carbon Tetrachloride	ND	0.2
Bromodichloromethane	ND	0.4
1,2-Dichloropropane	ND	0.3
cis-1,3-Dichloropropene	ND	0.1
Trichloroethene	ND	0.3
Dibromochloromethane	ND	0.3
1,1,2-Trichloroethane	ND	0.3
Benzene	ND	0.3
trans-1,3-Dichloropropene	ND	0.3
2-Chloroethyl Vinyl Ether	ND	0.5
Bromoform	ND	0.3
Tetrachloroethene	ND	0.2
1,1,2,2-Tetrachloroethane	ND	0.3
Toluene	ND	0.2
Chlorobenzene	ND	0.2
Ethylbenzene	ND	0.2
Xylene (Total)	ND	0.3
MTBE	ND	
n-Propanol	ND	500

Client ID: Trip Blank
Site: Elco Chemical

Lab Sample No: 354109
Lab Job No: X045

Date Sampled: 06/03/02
Date Received: 06/04/02
Date Analyzed: 06/08/02
GC Column: DB624
Instrument ID: VOAMS4.i
Lab File ID: d27231.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/MS
TENTATIVELY IDENTIFIED COMPOUNDS
METHOD 624

COMPOUND NAME	RT	EST. CONC. ug/l	Q
1. NO VOLATILE ORGANIC COMPOUNDS FOUND			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
25.			
26.			
27.			
28.			
29.			
30.			
TOTAL ESTIMATED CONCENTRATION		0.0	

Client ID: GEC-2
Site: Elco Chemical

Lab Sample No: 354110
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Analyzed: 06/08/02
GC Column: DB624
Instrument ID: VOAMS4.i
Lab File ID: d27233.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 200.0

VOLATILE ORGANICS - GC/MS
METHOD 624

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Chloromethane	ND	86
Bromomethane	ND	64
Vinyl Chloride	2600	58
Chloroethane	7300	96
Methylene Chloride	19000	180
Trichlorofluoromethane	ND	82
1,1-Dichloroethene	ND	58
1,1-Dichloroethane	7500	54
trans-1,2-Dichloroethene	ND	46
cis-1,2-Dichloroethene	23000	62
Chloroform	ND	50
1,2-Dichloroethane	ND	72
1,1,1-Trichloroethane	ND	52
Carbon Tetrachloride	ND	60
Bromodichloromethane	ND	40
1,2-Dichloropropane	4700	70
cis-1,3-Dichloropropene	ND	60
Trichloroethene	41	24
Dibromochloromethane	ND	54
1,1,2-Trichloroethane	ND	56
Benzene	ND	58
trans-1,3-Dichloropropene	ND	56
2-Chloroethyl Vinyl Ether	ND	94
Bromoform	ND	58
Tetrachloroethene	ND	48
1,1,2,2-Tetrachloroethane	ND	62
Toluene	4900	48
Chlorobenzene	ND	42
Ethylbenzene	ND	30
Xylene (Total)	ND	36
MTBE	ND	52
n-Propanol	ND	100000

Client ID: GEC-2
Site: Elco Chemical

Lab Sample No: 354110
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Analyzed: 06/08/02
GC Column: DB624
Instrument ID: VOAMS4.i
Lab File ID: d27233.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 ml
Dilution Factor: 200.0

VOLATILE ORGANICS - GC/MS
TENTATIVELY IDENTIFIED COMPOUNDS
METHOD 624

COMPOUND NAME	RT	EST. CONC. ug/l	Q
1. 2-Propanone	5.37	640	
2. 2-Propanol	5.55	980	
3. 2-Pentanone, 4-methyl-	11.09	1000	
4. C6H14O Alcohol	11.51	1000	
5. Disulfide, diethyl	14.18	1000	
6. C9H18O Ketone	14.76	1900	
7. Unknown Alcohol/C9H12 Aromatic	15.11	960	
8. Unknown	16.05	940	
9. C9H16O Ketone	16.23	14000	
10.			
11.			
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30.			
TOTAL ESTIMATED CONCENTRATION		22420	

Client ID: MW-1
Site: Elco Chemical

Lab Sample No: 354106
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Analyzed: 06/11/02
GC Column: GS-Q
Instrument ID: VSCREEN3.i
Lab File ID: scrc0334.d

Matrix: WATER
Level: MED
Purge Volume: 10.0 mL
Final Volume: 0.0 mL
Dilution Factor: 100.0

**METHANE, ETHANE, ETHENE
METHOD 3810**

<u>Parameter</u>	<u>Analytical Result</u>	<u>Quantitation Limit</u>
	<u>Units: ug/l</u>	<u>Units: ug/l</u>
Methane	5500	500
Ethene	ND	500
Ethane	ND	500

Client ID: GEC-1
Site: Elco Chemical

Lab Sample No: 354107
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Analyzed: 06/11/02
GC Column: GS-Q
Instrument ID: VSCREEN3.i
Lab File ID: scrc0335.d

Matrix: WATER
Level: MED
Purge Volume: 10.0 mL
Final Volume: 0.0 mL
Dilution Factor: 100.0

**METHANE, ETHANE, ETHENE
METHOD 3810**

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Quantitation Limit</u> <u>Units: ug/l</u>
Methane	9400	500
Ethene	ND	500
Ethane	ND	500

Client ID: **Field Blank**
Site: Elco Chemical

Lab Sample No: **354108**
Lab Job No: **X045**

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Analyzed: 06/11/02
GC Column: GS-Q
Instrument ID: VSCREEN3.i
Lab File ID: scrc0320.d

Matrix: WATER
Level: MED
Purge Volume: 10.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

METHANE, ETHANE, ETHENE
METHOD 3810

<u>Parameter</u>	<u>Analytical Result</u>	<u>Quantitation Limit</u>
	<u>Units: ug/l</u>	<u>Units: ug/l</u>
Methane	ND	5.0
Ethene	ND	5.0
Ethane	ND	5.0

Client ID: Trip Blank
Site: Elco Chemical

Lab Sample No: 354109
Lab Job No: X045

Date Sampled: 06/03/02
Date Received: 06/04/02
Date Analyzed: 06/11/02
GC Column: GS-Q
Instrument ID: VSCREEN3.i
Lab File ID: scrc0321.d

Matrix: WATER
Level: MED
Purge Volume: 10.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

METHANE, ETHANE, ETHENE
METHOD 3810

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Quantitation</u> <u>Limit</u> <u>Units: ug/l</u>
Methane	ND	5.0
Ethene	ND	5.0
Ethane	ND	5.0

Client ID: GEC-2
Site: Elco Chemical

Lab Sample No: 354110
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Analyzed: 06/11/02
GC Column: GS-Q
Instrument ID: VSCREEN3.i
Lab File ID: scrc0324.d

Matrix: WATER
Level: MED
Purge Volume: 10.0 mL
Final Volume: 0.0 mL
Dilution Factor: 10.0

METHANE, ETHANE, ETHENE
METHOD 3810

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Quantitation</u> <u>Limit</u> <u>Units: ug/l</u>
Methane	1200	50
Ethene	150	50
Ethane	ND	50

Client ID: MW-2
Site: Elco Chemical

Lab Sample No: 354111
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Analyzed: 06/11/02
GC Column: GS-Q
Instrument ID: VSCREEN3.i
Lab File ID: scrc0344.d

Matrix: WATER
Level: MED
Purge Volume: 10.0 mL
Final Volume: 0.0 mL
Dilution Factor: 25.0

METHANE, ETHANE, ETHENE
METHOD 3810

Parameter

Analytical Result
Units: ug/l

Quantitation
Limit
Units: ug/l

Methane	1600	120
Ethene	ND	120
Ethane	ND	120

Client ID: MW-3
Site: Elco Chemical

Lab Sample No: 354112
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Analyzed: 06/11/02
GC Column: GS-Q
Instrument ID: VSCREEN3.i
Lab File ID: scrc0337.d

Matrix: WATER
Level: MED
Purge Volume: 10.0 mL
Final Volume: 0.0 mL
Dilution Factor: 100.0

**METHANE, ETHANE, ETHENE
METHOD 3810**

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Quantitation</u> <u>Limit</u> <u>Units: ug/l</u>
Methane	8800	500
Ethene	ND	500
Ethane	ND	500

Client ID: GEC-1
Site: Elco Chemical

Lab Sample No: 354107
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Extracted: 06/05/02
Date Analyzed: 06/18/02
GC Column: DB-5
Instrument ID: BNAMS7.i
Lab File ID: 11736.d

Matrix: WATER
Level: LOW
Sample Volume: 750 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 100.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
N-Nitrosodimethylamine	ND	83
bis(2-Chloroethyl)ether	ND	80
1,3-Dichlorobenzene	ND	100
1,4-Dichlorobenzene	ND	110
1,2-Dichlorobenzene	ND	110
bis(2-chloroisopropyl)ether	ND	67
N-Nitroso-di-n-propylamine	ND	160
Hexachloroethane	ND	110
Nitrobenzene	ND	100
Isophorone	14000	29
bis(2-Chloroethoxy)methane	ND	85
1,2,4-Trichlorobenzene	ND	100
Naphthalene	ND	84
Hexachlorobutadiene	ND	150
Hexachlorocyclopentadiene	ND	220
2-Chloronaphthalene	ND	110
Dimethylphthalate	ND	72
Acenaphthylene	ND	77
2,6-Dinitrotoluene	ND	53
Acenaphthene	ND	76
2,4-Dinitrotoluene	ND	33
Diethylphthalate	5300	57
4-Chlorophenyl-phenylether	ND	110
Fluorene	ND	81
N-Nitrosodiphenylamine	ND	69
4-Bromophenyl-phenylether	ND	260
Hexachlorobenzene	ND	150
Phenanthrene	ND	65
Anthracene	ND	56
Di-n-butylphthalate	ND	56
Fluoranthene	ND	55
Pyrene	ND	56
Benzidine	ND	3300
Butylbenzylphthalate	ND	53

Client ID: GEC-1
Site: Elco Chemical

Lab Sample No: 354107
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Extracted: 06/05/02
Date Analyzed: 06/18/02
GC Column: DB-5
Instrument ID: BNAMS7.i
Lab File ID: 11736.d

Matrix: WATER
Level: LOW
Sample Volume: 750 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 100.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u>	<u>Method Detection Limit</u>
	<u>Units: ug/l</u>	<u>Units: ug/l</u>
3,3'-Dichlorobenzidine	ND	170
Benzo(a)anthracene	ND	51
Chrysene	ND	65
bis(2-Ethylhexyl)phthalate	ND	59
Di-n-octylphthalate	ND	17
Benzo(b)fluoranthene	ND	36
Benzo(k)fluoranthene	ND	110
Benzo(a)pyrene	ND	20
Indeno(1,2,3-cd)pyrene	ND	19
Dibenz(a,h)anthracene	ND	84
Benzo(g,h,i)perylene	ND	47

Client ID: GEC-1
Site: Elco Chemical

Lab Sample No: 354107
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Extracted: 06/05/02
Date Analyzed: 06/18/02
GC Column: DB-5
Instrument ID: BNAMS7.i
Lab File ID: 11736.d

Matrix: WATER
Level: LOW
Sample Volume: 750 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 100.0

SEMI-VOLATILE ORGANICS - GC/MS
TENTATIVELY IDENTIFIED COMPOUNDS
METHOD 625

COMPOUND NAME	RT	EST. CONC. ug/l	Q
1. Unknown Alcohol	8.34	12000	
2. Unknown Alcohol	8.56	2500	
3. Unknown Alcohol	10.37	4200	
4. Unknown	10.53	22000	
5. Unknown Alcohol	11.10	3100	
6. Cyclohexanol	11.51	10000	
7. Ethanol, 2-butoxy-	11.83	50000	
8. Unknown Alcohol	12.11	3100	
9. Unknown	12.83	4500	
10. Unknown Alcohol	13.26	12000	
11. Unknown Alcohol	13.59	4800	
12. Unknown Alcohol	13.80	2700	
13. Unknown	13.82	3200	
14. Cyclohexanone, 3,3,5-trimethyl-	13.93	75000	
15. Unknown Alcohol	15.56	110000	
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
25.			
26.			
27.			
28.			
29.			
30.			

TOTAL ESTIMATED CONCENTRATION

319100

Client ID: **Field_Blank**
Site: Elco Chemical

Lab Sample No: **354108**
Lab Job No: **X045**

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Extracted: 06/05/02
Date Analyzed: 06/18/02
GC Column: DB-5
Instrument ID: BNAMS7.i
Lab File ID: l1737.d

Matrix: WATER
Level: LOW
Sample Volume: 980 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
N-Nitrosodimethylamine	ND	0.6
bis(2-Chloroethyl)ether	ND	0.6
1,3-Dichlorobenzene	ND	0.8
1,4-Dichlorobenzene	ND	0.8
1,2-Dichlorobenzene	ND	0.8
bis(2-chloroisopropyl)ether	ND	0.5
N-Nitroso-di-n-propylamine	ND	1.2
Hexachloroethane	ND	0.9
Nitrobenzene	ND	0.8
Isophorone	ND	0.2
bis(2-Chloroethoxy)methane	ND	0.7
1,2,4-Trichlorobenzene	ND	0.8
Naphthalene	ND	0.6
Hexachlorobutadiene	ND	1.2
Hexachlorocyclopentadiene	ND	1.7
2-Chloronaphthalene	ND	0.8
Dimethylphthalate	ND	0.6
Acenaphthylene	ND	0.6
2,6-Dinitrotoluene	ND	0.4
Acenaphthene	ND	0.6
2,4-Dinitrotoluene	ND	0.3
Diethylphthalate	ND	0.4
4-Chlorophenyl-phenylether	ND	0.9
Fluorene	ND	0.6
N-Nitrosodiphenylamine	ND	0.5
4-Bromophenyl-phenylether	ND	2.0
Hexachlorobenzene	ND	1.1
Phenanthrene	ND	0.5
Anthracene	ND	0.4
Di-n-butylphthalate	ND	0.4
Fluoranthene	ND	0.4
Pyrene	ND	0.4
Benzidine	ND	25
Butylbenzylphthalate	ND	0.4

Client ID: **Field Blank**
Site: Elco Chemical

Lab Sample No: 354108
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Extracted: 06/05/02
Date Analyzed: 06/18/02
GC Column: DB-5
Instrument ID: BNAMS7.i
Lab File ID: 11737.d

Matrix: WATER
Level: LOW
Sample Volume: 980 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
3,3'-Dichlorobenzidine	ND	1.3
Benzo(a)anthracene	ND	0.4
Chrysene	ND	0.5
bis(2-Ethylhexyl)phthalate	17	0.4
Di-n-octylphthalate	ND	0.1
Benzo(b)fluoranthene	ND	0.3
Benzo(k)fluoranthene	ND	0.8
Benzo(a)pyrene	ND	0.2
Indeno(1,2,3-cd)pyrene	ND	0.1
Dibenz(a,h)anthracene	ND	0.6
Benzo(g,h,i)perylene	ND	0.4

Client ID: **Field_Blank**
Site: Elco Chemical

Lab Sample No: **354108**
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Extracted: 06/05/02
Date Analyzed: 06/18/02
GC Column: DB-5
Instrument ID: BNAMS7.i
Lab File ID: 11737.d

Matrix: WATER
Level: LOW
Sample Volume: 980 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
TENTATIVELY IDENTIFIED COMPOUNDS
METHOD 625

COMPOUND NAME	RT	EST. CONC. ug/l	Q
1. NO SEMI-VOLATILE ORGANIC COMPOUNDS FOUND			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
25.			
26.			
27.			
28.			
29.			
30.			
TOTAL ESTIMATED CONCENTRATION		0.0	

Client ID: GEC-2
Site: Elco Chemical

Lab Sample No: 354110
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Extracted: 06/05/02
Date Analyzed: 06/18/02
GC Column: DB-5
Instrument ID: BNAMS7.i
Lab File ID: 11738.d

Matrix: WATER
Level: LOW
Sample Volume: 900 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 100.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
N-Nitrosodimethylamine	ND	69
bis(2-Chloroethyl)ether	ND	67
1,3-Dichlorobenzene	ND	84
1,4-Dichlorobenzene	ND	89
1,2-Dichlorobenzene	ND	92
bis(2-chloroisopropyl)ether	ND	56
N-Nitroso-di-n-propylamine	ND	140
Hexachloroethane	ND	96
Nitrobenzene	ND	83
Isophorone	ND	24
bis(2-Chloroethoxy)methane	ND	71
1,2,4-Trichlorobenzene	ND	84
Naphthalene	100	70
Hexachlorobutadiene	ND	130
Hexachlorocyclopentadiene	ND	180
2-Chloronaphthalene	ND	89
Dimethylphthalate	ND	60
Acenaphthylene	ND	64
2,6-Dinitrotoluene	ND	44
Acenaphthene	ND	63
2,4-Dinitrotoluene	ND	28
Diethylphthalate	22000	48
4-Chlorophenyl-phenylether	ND	93
Fluorene	ND	68
N-Nitrosodiphenylamine	ND	58
4-Bromophenyl-phenylether	ND	210
Hexachlorobenzene	ND	120
Phenanthrene	ND	54
Anthracene	ND	47
Di-n-butylphthalate	ND	47
Fluoranthene	ND	46
Pyrene	ND	47
Benzidine	ND	2700
Butylbenzylphthalate	ND	44

Client ID: GEC-2
Site: Elco Chemical

Lab Sample No: 354110
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Extracted: 06/05/02
Date Analyzed: 06/18/02
GC Column: DB-5
Instrument ID: BNAMS7.i
Lab File ID: 11738.d

Matrix: WATER
Level: LOW
Sample Volume: 900 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 100.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u>	<u>Method Detection Limit</u>
	<u>Units: ug/l</u>	<u>Units: ug/l</u>
3,3'-Dichlorobenzidine	ND	140
Benzo(a)anthracene	ND	42
Chrysene	ND	54
bis(2-Ethylhexyl)phthalate	ND	49
Di-n-octylphthalate	ND	14
Benzo(b)fluoranthene	ND	30
Benzo(k)fluoranthene	ND	91
Benzo(a)pyrene	ND	17
Indeno(1,2,3-cd)pyrene	ND	16
Dibenz(a,h)anthracene	ND	70
Benzo(g,h,i)perylene	ND	39

Client ID: GEC-2
Site: Elco Chemical

Lab Sample No: 354110
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02
Date Extracted: 06/05/02
Date Analyzed: 06/18/02
GC Column: DB-5
Instrument ID: BNAMS7.i
Lab File ID: 11738.d

Matrix: WATER
Level: LOW
Sample Volume: 900 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 100.0

**SEMI-VOLATILE ORGANICS - GC/MS
TENTATIVELY IDENTIFIED COMPOUNDS
METHOD 625**

COMPOUND NAME	RT	EST. CONC. ug/l	Q
1. Unknown	7.46	970	
2. Toluene	8.51	1700	
3. Cyclohexanol	11.49	1900	
4. Cyclohexanone, 3,3,5-trimethyl-	13.92	19000	
5. Unknown	13.95	1400	
6. Unknown	14.09	49000	
7.			
8.			
9.			
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TOTAL ESTIMATED CONCENTRATION

73970

Client ID: MW-1
Site: Elco Chemical

Lab Sample No: 354106
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02

Matrix: WATER
Level: LOW

METALS ANALYSIS

<u>Analyte</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Instrument Detection Limit</u>	<u>M</u>
Iron	47200	37.1	P
Manganese	2680	1.0	P

M Column - Method Code (See Section 2 of Report)

Client ID: GEC-1
Site: Elco Chemical

Lab Sample No: 354107
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02

Matrix: WATER
Level: LOW

METALS ANALYSIS

<u>Analyte</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Instrument Detection Limit</u>	<u>M</u>
Iron	910000	371	P
Manganese	56400	10.0	P

M Column - Method Code (See Section 2 of Report)

Client ID: Field Blank
Site: Elco Chemical

Lab Sample No: 354108
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02

Matrix: WATER
Level: LOW

METALS ANALYSIS

<u>Analyte</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Instrument Detection Limit</u>	<u>M</u>
Iron	ND	37.1	P
Manganese	ND	1.0	P

M Column - Method Code (See Section 2 of Report)

Client ID: GEC-2
Site: Elco Chemical

Lab Sample No: 354110
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02

Matrix: WATER
Level: LOW

METALS ANALYSIS

<u>Analyte</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Instrument Detection Limit</u>	<u>M</u>
Iron	469000	371	P
Manganese	9620	10.0	P

M Column - Method Code (See Section 2 of Report)

Client ID: MW-2
Site: Elco Chemical

Lab Sample No: 354111
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02

Matrix: WATER
Level: LOW

METALS ANALYSIS

<u>Analyte</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Instrument Detection Limit</u>	<u>M</u>
Iron	683000	371	P
Manganese	3950	10.0	P

M Column - Method Code (See Section 2 of Report)

Client ID: MW-3
Site: Elco Chemical

Lab Sample No: 354112
Lab Job No: X045

Date Sampled: 06/04/02
Date Received: 06/04/02

Matrix: WATER
Level: LOW

METALS ANALYSIS

<u>Analyte</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Instrument Detection Limit</u>	<u>M</u>
Iron	122000	371	P
Manganese	7310	10.0	P

M Column - Method Code (See Section 2 of Report)

Site: Elco Chemical

Lab Job No: X045

Date Received: 06/04/2002
Matrix: WATER

Date Analyzed: 06/05/2002
QA Batch: 0654

Nitrate

<u>STL Edison</u>	<u>Client ID</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analytical Result</u>
<u>Sample #</u>		<u>Date</u>	<u>Factor</u>	<u>Units: mg/l</u>
354106	MW-1	06/04/2002	1.0	ND
354107	GEC-1	06/04/2002	1.0	ND
354108	Field_Blank	06/04/2002	1.0	ND
354110	GEC-2	06/04/2002	1.0	ND
354111	MW-2	06/04/2002	1.0	ND
354112	MW-3	06/04/2002	1.0	ND

Quantitation Limit for Nitrate is 0.1 mg/l.

Site: Elco Chemical

Lab Job No: X045

Date Received: 06/04/2002

Date Analyzed: 06/12/2002

Matrix: WATER

QA Batch: 1683

Sulfate

<u>STL Edison</u>	<u>Client ID</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analytical Result</u>
<u>Sample #</u>		<u>Date</u>	<u>Factor</u>	<u>Units: mg/l</u>
354106	MW-1	06/04/2002	1.0	ND
354107	GEC-1	06/04/2002	1.0	33.8
354108	Field_Blank	06/04/2002	1.0	ND
354110	GEC-2	06/04/2002	1.0	ND
354111	MW-2	06/04/2002	1.0	16.0
354112	MW-3	06/04/2002	1.0	10.5

Quantitation Limit for Sulfate is 5.0 mg/l.

General Information

Chain of Custody

STL EDISON

**777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679**

CHAIN OF CUSTODY / ANALYSIS REQUEST

PAGE 1 OF 3

Special Instructions

Water Metals Filtered (Yes/No)?

Relinquished by	Company	Date / Time	Received by	Company
1) <i>Audra M Mayes</i>	GEC	6/4/02 11:30	1) <i>Audra M Mayes</i>	-
2) <i>Audra M Mayes</i>	Houghton	6/4/02 13:37	2) <i>Ed Reynolds</i>	SST
3) <i>Ed Reynolds</i>	STL Edison	6/4/02 17:20	3) <i>Ed Reynolds</i>	-
4) <i>Ed Reynolds</i>	Ed Reynolds		4)	-

STL EDISON

**777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679**

CHAIN OF CUSTODY / ANALYSIS REQUEST

PAGE 2 OF 3

Name (for report and invoice) Parrish Smotcha		Samplers Name (Printed) Lauren Margaret		Site/Project Identification Houghton Chemical (EcoSolvents) (ARISTAD)					
Company Goldman Environmental	P.O. # 10601-1020			State (Location of site): NJ: <input checked="" type="checkbox"/> NY: <input type="checkbox"/> Other:					
Address 60 Brooks Dr.			Regulatory Program:						
City Braintree, MA	Analysis Turnaround Time Standard <input checked="" type="checkbox"/>		ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)		LAB USE ONLY				
State	Rush Charges Authorized For: 2 Week <input type="checkbox"/> 1 Week <input type="checkbox"/> Other <input type="checkbox"/>		Methane, Ethane	Nitrate, Sulfate	Disolved/Nn, Fe	PPVOA + 10 ⁺ Propene	PP BN + 15		Project No:
Phone 781-356-9140	Fax 781-356-9147	Date 6/4/02	Time 13:25	Preserve Matrix 1,2	No. of Cont. 3 40ml vials		X		Job No: X045
Sample Identification GEC-2					1 L Amber		X		Sample Numbers 354110
					1,2 340ml vials	X			
					1 150 ml plastic	X			
					1,4 1 plastic	X			
MW-2					3 10ml vials	X			354111
					1 50ml plastic	X			
					1,4 1 plastic	X			
Preservation Used: 1 = ICE, 2 = HCl, 3 = H ₂ SO ₄ , 4 = HNO ₃ , 5 = NaOH						Soil:			
6 = Other _____, 7 = Other _____						Water:			

Special Instructions

Water Metals Filtered (Yes/No)?

Special Instructions				
Relinquished by	Company	Date / Time	Received by	Company
1) <i>Audia Mays</i>	GEZ	6/4/02 15:30	1) <i>Audia Mays</i>	
2) <i>Audia Mays</i>	Houghton	6/4/02 13:37	2) <i>Ed Reynolds</i>	STL
3) <i>Ed Reynolds</i>	STL Edison Ed Reynolds	6/4/02 17:20	3)	
4)	Company	Date / Time	Received by	Company

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CHAIN OF CUSTODY / ANALYSIS REQUEST

PAGE 3 OF 3

Special Instructions

Water Metals Filtered (Yes/No)?

Relinquished by 1) <i>Audia M Mayer</i>	Company <i>GEC</i>	Date / Time <i>6/4/02 15:30</i>	Received by 1) <i>Audia M Mayer</i>	Company -
Relinquished by 2) <i>Audia M Mayer</i>	Company <i>Brighton</i>	Date / Time <i>6/4/02 15:37</i>	Received by 2) <i>Ed Reynolds</i>	Company <i>STL</i>
Relinquished by 3) <i>Ed Reynolds</i>	Company <i>STL Edison</i>	Date / Time <i>6/4/02 17:20</i>	Received by 3)	Company
Relinquished by 4)	Company <i>CA Reynolds</i>	Date / Time 	Received by 4)	Company

APPENDIX B:

Monitoring Well Purge Data and Physicochemical Parameters

GOLDMAN ENVIRONMENTAL CONSULTANTS, INC.

Monitoring Well Purge Data & Physio-Chemical Parameters

Client:	<u>HOUGHTON CHEMICAL</u>	Date:	<u>6/4/02</u>
Well ID:	<u>MW-1</u>	Personnel:	<u>Lnm/CW</u>
Initial PID (ppm) =	<u>0 ppm</u>	Depth to Product from Top of Casing (ft) =	<u>—</u>
Casing Diameter (in) =	<u>4.1 inch</u>	Product Thickness =	<u>—</u>
Total Depth of Well from Top of Casing (ft) =	<u>6.00</u>	Purge Start Time:	<u>12:31</u>
Depth to Water from Top of Casing (ft) =	<u>1.16</u>	Purge End Time:	<u>12:50</u>
Water Column Thickness =	<u>4.84</u>	Sample Collection Time:	<u>12:50</u>
Conversion =	<u>3.1 gal</u>	Sampling Method:	<u>Bailex</u>
Estimate of 3 well Volumes to purge (gal) =	<u>9.5 gal.</u>		

GOLDMAN ENVIRONMENTAL CONSULTANTS, INC.

Monitoring Well Purge Data & Physio-Chemical Parameters

Client:	<u>HOUGHTON CHEMICAL</u>	Date:	<u>6/14/02</u>
Well ID:	<u>GEC-1</u>	Personnel:	<u>LMM/CW</u>
Initial PID (ppm) =	<u>8.0 ppm</u>	Depth to Product from Top of Casing (ft) =	<u>—</u>
Casing Diameter (in) =	<u>1-1/2 inch</u>	Product Thickness =	<u>—</u>
Total Depth of Well from Top of Casing (ft) =	<u>35.20</u>	Purge Start Time:	<u>12:45</u>
Depth to Water from Top of Casing (ft) =	<u>2.00</u>	Purge End Time:	<u>13:00</u>
Water Column Thickness =	<u>33.20</u>	Sample Collection Time:	<u>13:45</u>
Conversion =	<u>1.3 gal</u>	Sampling Method:	<u>Bailey</u>
Estimate of 3 well Volumes to purge (gal) =	<u>4 gal</u>	<u>Reused w/ distilled by DML</u>	

GOLDMAN ENVIRONMENTAL CONSULTANTS, INC.

Monitoring Well Purge Data & Physio-Chemical Parameters

GOULDMAN ENVIRONMENTAL CONSULTANTS, INC.

Monitoring Well Purge Data & Physio-Chemical Parameters

Client:	<u>Houghton Chemical</u>	Date:	<u>6/4/07</u>
Well ID:	<u>GEC-2</u>	Personnel:	<u>LMK/LW</u>
Initial PID (ppm) =	<u>4.0 ppm</u>	Depth to Product from Top of Casing (ft) =	<u>—</u>
Casing Diameter (in) =	<u>1-inch</u>	Product Thickness =	<u>—</u>
Total Depth of Well from Top of Casing (ft) =	<u>8.53</u>	Purge Start Time:	<u>13:15</u>
Depth to Water from Top of Casing (ft) =	<u>2.168</u>	Purge End Time:	<u>13:25</u>
Water Column Thickness =	<u>5.85</u>	Sample Collection Time:	<u>13:25</u>
Conversion =	<u>0.2 gal</u>	Sampling Method:	<u>Baiter</u>
Estimate of 3 well Volumes to purge (gal) =	<u>0.7 gal</u>		

GOLDMAN ENVIRONMENTAL CONSULTANTS, INC.

Monitoring Well Purge Data & Physio-Chemical Parameters

Client:	<u>HOUGHTON CHEMICAL</u>	Date:	<u>6/4/02</u>
Well ID:	<u>MW-3</u>	Personnel:	<u>LMM/CW</u>
Initial PID (ppm) =	<u>0 ppm</u>	Depth to Product from Top of Casing (ft) =	<u>—</u>
Casing Diameter (in) =	<u>4-inch</u>	Product Thickness =	<u>—</u>
Total Depth of Well from Top of Casing (ft) =	<u>12.08</u>	Purge Start Time:	<u>14:18</u>
Depth to Water from Top of Casing (ft) =	<u>3.69</u>	Purge End Time:	<u>14:50</u>
Water Column Thickness =	<u>8.39 ft</u>	Sample Collection Time:	<u>14:50</u>
Conversion =	<u>5.5 gal.</u>	Sampling Method:	<u>Bailer</u>
Estimate of 3 well Volumes to purge (gal) =	<u>17 gal.</u>		

APPENDIX C:
Tabular Summary of Groundwater Analytical Data

TABLE 5
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-1					MW-2				
		3810-001 7/8/98 WATER 1000 ug/L	152040 8/19/99 WATER 100.0 ug/L	327175 01/15/02 WATER 100.0 ug/L	354106 06/04/02 WATER NR		3810-002 7/8/98 WATER 1000 ug/L	152041 8/19/99 WATER 25.0 ug/L	327176 01/15/02 WATER 10.0 ug/L	354111 06/04/02 WATER NR	
VOLATILE COMPOUNDS (GC/MS)											
	Chloromethane	30	1,000	U	42	U	33	U	NR	1,000	U
	Bromomethane	10	1,000	U	55	U	21	U	NR	1,000	U
	VinylChloride	5	1,000	U	5,900		72		NR	1,000	U
	Chloroethane	NS	1,000	U	1,900		610		NR	1,000	U
	^ MethyleneChloride	3	37,300		380		3,100		NR	8,590	620
	Trichlorofluoromethane	NS	1,000	U	35	U	35	U	NR	1,000	U
	1,1-Dichloroethene	2	1,000	U	220		24	U	NR	1,000	U
	^ 1,1-Dichloroethane	50	1,770		2,900		290		NR	1,780	1,600
	trans-1,2-Dichloroethene	100	1,000	U	45	U	26		NR	1,000	U
	^ cis-1,2-Dichloroethene	70	NR		12,000		1,000		NR	NR	2,800
	Chloroform	6	1,000	U	37	U	19	U	NR	1,000	U
	1,2-Dichloroethane	2	1,000	U	29	U	21	U	NR	1,000	U
	1,1,1-Trichloroethane	30	1,130		55		35		NR	2,460	1,600
	CarbonTetrachloride	2	1,000	U	44	U	25	U	NR	1,000	U
	Bromodichloromethane	1	1,000	U	23	U	16	U	NR	1,000	U
	1,2-Dichloropropane	1	1,600		2,300		300		NR	1,720	1,600
(1)	cis-1,3-Dichloropropene	NS	1,000	U	27	U	17	U	NR	1,000	U
	Trichloroethene	1	1,090		31	U	43		NR	1,000	U
	Dibromochloromethane	10	1,000	U	32	U	13	U	NR	1,000	U
	1,1,2-Trichloroethane	3	1,000	U	35	U	20	U	NR	1,000	U
	Benzene	1	500	U	33	U	23		NR	500	U
(1)	trans-1,3-Dichloropropene	NS	1,000	U	31	U	15	U	NR	1,000	U
	2-ChlorethylVinylEther	NS	1,000	U	42	U	42	U	NR	1,000	U
	Bromoform	4	1,000	U	33	U	18	U	NR	1,000	U
	Tetrachloroethene	1	1,000	U	14	U	28	U	NR	1,000	U
	^ 1,1,2,2-Tetrachloroethane	1	1,000	U	32	U	12	U	NR	1,000	U
	Toluene	1,000	1,000	U	1,800		2,000		NR	1,990	2,300
	^ Chlorobenzene	50	1,000	U	19	U	15	U	NR	1,000	U
	Ethybenzene	700	1,000	U	160		130		NR	1,000	U
	^ Xylene(Total)	1,000	1,000	U	1,100		850		NR	1,000	U
	^ MTBE	70	NR		35	U	19	U	NR	NR	8.8
	n-Propanol	NS	NR		10,000	U	25,000	U	NR	NR	2,500
	Total Confident Conc. VOAs (s)		42,890		28,715		8,479			16,540	14,551
	Total Estimated Conc. VOA TICs (s)		33,700		110,830		63,670			3,600	9,560
											3231
											337

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.

- (1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.
- (2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.
- ^ Standard is a revision to the Class IIA ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.

Qualifiers:

- U - The compound was not detected at the indicated concentration.
- J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.
- B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
- NR - Not analyzed.
- NS - No standard has been developed by the Department.

TABLE 5
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-3				MW-4				MW-5			
		3810-003 7/8/98	152042 8/19/99	327177 01/15/02	354111 06/04/02	WATER 50 ug/L	WATER 5.0 ug/L	WATER 10.0 ug/L	WATER 1.0 ug/L	WATER 1.0 ug/L	WATER 5.0 ug/L	WATER 2.0 ug/L	WATER 5.0 ug/L
VOLATILE COMPOUNDS (GC/MS)													
	Chloromethane	30	50	U	2.1 U	3.3 U	NR	0.4 U	0.3 U	2.1 U	0.7 U		
	Bromomethane	10	50	U	2.8 U	2.1 U	NR	0.6 U	0.2 U	2.8 U	0.4 U		
	VinylChloride	5	50	U	2.2 U	2.3 U	NR	9.1	5	2.2 U	0.5 U		
	Chloroethane	NS	332	690	1,500	NR	0.4 U	0.3 U	340	400			
	▲ MethyleneChloride	3	485	80	40	NR	1.0 U	1 U	5.0 U	2 U			
	Trichlorofluoromethane	NS	50	U	1.8 U	3.5 U	NR	0.3 U	0.4 U	1.8 U	0.7 U		
	1,1-Dichloroethene	2	50	U	2.4 U	2.4 U	NR	0.9	0.4	2.4 U	0.5 U		
	▲ 1,1-Dichloroethene	50	461	7.0	12	NR	55	8.1	1.4 U	1.3			
	trans-1,2-Dichloroethene	100	50	U	2.2 U	2.2	NR	1.0	0.5	2.2 U	1.2		
	▲ cis-1,2-Dichloroethene	70	NR	1.8 U	1.8 U	NR	49	21	1.8 U	0.4 U			
	Chloroform	6	50	U	1.8 U	1.9 U	NR	0.4 U	0.2 U	1.8 U	0.4 U		
	1,2-Dichloroethane	2	50	U	1.4 U	2.1 U	NR	0.3 U	0.2 U	1.4 U	0.4 U		
(1)	1,1,1-Trichloroethane	30	50	U	1.5 U	2.6 U	NR	0.3 U	0.3 U	1.5 U	0.5 U		
	CarbonTetrachloride	2	50	U	2.2 U	2.5 U	NR	0.4 U	0.2 U	2.2 U	0.5 U		
	Bromodichloromethane	1	50	U	1.2 U	1.6 U	NR	0.2 U	0.2 U	1.2 U	0.3 U		
	1,2-Dichloropropane	1	50	U	0.7 U	1.6 U	NR	0.1 U	0.2 U	0.7 U	0.3 U		
	cis-1,3-Dichloropropene	NS	50	U	1.4 U	1.7 U	NR	0.3 U	0.2 U	1.4 U	0.3 U		
	Trichloroethene	1	50	U	1.6 U	3.1 U	NR	0.3 U	2.2	1.6 U	0.6 U		
	DibromoChloromethane	10	50	U	1.6 U	1.3 U	NR	0.3 U	0.1 U	1.6 U	0.3 U		
	1,1,2-Trichloroethane	3	50	U	1.8 U	2 U	NR	0.3 U	0.2 U	1.8 U	0.4 U		
	Benzene	1	25	U	10	30	NR	0.3 U	0.2 U	57	26		
(1)	trans-1,3-Dichloropropene	NS	50	U	1.6 U	1.5 U	NR	0.3 U	0.2 U	1.6 U	0.3 U		
	2-ChloroethylVinylEther	NS	50	U	2.1 U	4.2 U	NR	0.4 U	0.4 U	2.1 U	0.8 U		
	Bromoform	4	50	U	1.6 U	1.8 U	NR	0.3 U	0.2 U	1.6 U	0.4 U		
	Tetrachloroethene	1	50	U	0.7 U	2.8 U	NR	0.1 U	0.3 U	0.7 U	0.6 U		
	▲ 1,1,2,2-Tetrachloroethane	1	50	U	1.6 U	1.2 U	NR	0.3 U	0.1 U	1.6 U	0.2 U		
	Toluene	1,000	288		44	93	NR	0.3 U	0.2	7.6	5.7		
	▲ Chlorobenzene	50	50	U	14	21	NR	0.2 U	0.2 U	13	25		
	Ethybenzene	700	50	U	24	53	NR	0.2 U	0.2 U	48	42		
	▲ Xylene(Total)	1,000	50	U	22	66	NR	0.3 U	0.2 U	20	33		
	▲ MTBE	70	NR	1.8 U	1.9 U	NR	0.9	0.2 U	34	3.5			
	n-Propanol	NS	NR	500 U	2,500 U	NR	100 U	250 U	500 U	500 U			
	Total Confident Conc. VOAs (s)		1566	891	1,837		115.9	37	519.6	538			
	Total Estimated Conc. VOA TICs (s)		10,980	3,263	1,063		0	0	1202	645			

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.

- (1) Values listed reflect the combined standards for the cis and trans isomers.
- (2) The Action Levels listed reflect current STL Edison knowledge of the standards. Guidance for the user: Please consult appropriate regulations and codes.
- ▲ Standard is a revision to the Class IIA ground water quality standard based on maximum contaminant level changes and the February 5, 1997 policy.

Qualifiers:

- U - The compound was not detected at the indicated concentration.
- J - Data indicates the presence of a compound that meets the identification criteria. The approximate value.
- B - The analysis was found in the laboratory blank as well as the sample. This indicates poor quality.
- NR - Not analyzed.
- NS - No standard has been developed by the Department.

TABLE 5
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PCPs and Ground Water Quality Criteria (ug/l)	MW-6 152045 8/19/99 WATER 5.0 ug/L	MW-7 152046 8/19/99 WATER 1.0 ug/L	PZ-1 327181 01/15/02 WATER 1.0 ug/L	PZ-2 168783 11/11/99 WATER 1.0 ug/L	PZ-3 168784 11/11/99 WATER 1.0 ug/L	PZ-4 179239 1/13/00 WATER 1.0 ug/L	PZ-5 179240 1/13/00 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC/MS)								
	Chloromethane	30	2.1 U	0.4 U	0.3 U	0.4 U	0.4 U	0.4 U
	Bromomethane	10	2.8 U	0.6 U	0.2 U	0.6 U	0.6 U	0.6 U
	VinylChloride	5	2.2 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U
	Chloroethane	NS	440	0.4 U	0.3 U	0.4 U	0.4 U	0.4 U
	^ MethyleneChloride	3	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	Trichlorofluoromethane	NS	1.8 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U
	1,1-Dichloroethene	2	2.4 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U
	^ 1,1-Dichloroethene	50	190	1.0	0.2 U	0.3 U	0.3 U	0.3 U
	trans-1,2-Dichloroethene	100	2.2 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U
	^ cis-1,2-Dichloroethene	70	2.8	17	0.2 U	0.4 U	3.1	0.4 U
	Chloroform	6	1.8 U	0.4 U	0.2 U	0.4 U	0.4 U	0.4 U
	1,2-Dichloroethane	2	1.4 U	4.2	0.2 U	0.3 U	0.3 U	0.3 U
	1,1,1-Trichloroethane	30	1.5 U	0.3 U	0.3	0.3 U	0.3 U	0.3 U
	CarbonTetrachloride	2	2.2 U	0.4 U	0.2 U	0.4 U	0.4 U	0.4 U
	Bromodichloromethane	1	1.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
	1,2-Dichloropropane	1	0.7 U	31	0.2 U	0.1 U	5.9	0.1 U
(1)	cis-1,3-Dichloropropene	NS	1.4 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U
	Trichloroethene	1	1.6 U	17	0.3 U	0.3 U	1.8	0.3 U
	Dibromochloromethane	10	1.6 U	0.3 U	0.1 U	0.3 U	0.3 U	0.8
	1,1,2-Trichloroethane	3	1.8 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U
	Benzene	1	1.6 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U
(1)	trans-1,3-Dichloropropene	NS	1.6 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U
	2-ChloroethylVinylEther	NS	2.1 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
	Bromoform	4	1.6 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U
	Tetrachloroethene	1	0.7 U	0.1 U	0.3 U	0.1 U	0.1 U	0.1 U
	^ 1,1,2,2-Tetrachloroethane	1	1.6 U	0.3 U	0.1 U	0.3 U	0.3 U	0.3 U
	Toluene	1,000	1.3 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U
	^ Chlorobenzene	50	0.9 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
	Ethylbenzene	700	1.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
	^ Xylene(Total)	1,000	1.8 U	0.3 U	0.2 U	0.3 U	0.3 U	0.3 U
	^ MTBE	70	1.8 U	0.3 U	0.2 U	NR	NR	NR
	n-Propanol	NS	500 U	100 U	250 U	NR	NR	NR
	Total Confident Conc. VOAs (s)		192.8	70.2	0.3	0	10.8	0
	Total Estimated Conc. VOA TICs (s)		0	0	0	0	0	0
						21.6	21.6	38.8
						0	0	0

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Crit

- (1) Values listed reflect the combined standards for the cis and trans isom
- (2) The Action Levels listed reflect current STL Edison knowledge of the s
- The concentration given is an approximate value.
- Standard is a revision to the Class IIA ground water quality standard b:
- maximum contaminant level changes and the February 5, 1997 policy

Qualifiers:

- U - The compound was not detected at the indicated concentration.
- J - Data indicates the presence of a compound that meets the identification criteria. The r
- The concentration given is an approximate value.
- B - The analyte was found in the laboratory blank as well as the sample. This indicates pos
- NR - Not analyzed.
- NS - No standard has been developed by the Department.

TABLE 5
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	PZ-6 179242 1/13/00 WATER 1.0 ug/L	PZ-7 179243 1/13/00 WATER 1.0 ug/L	PZ-8 179244 1/13/00 WATER 1.0 ug/L	GEC-1 330065 01/30/02 WATER 250.0 ug/L	GEC-2 330066 01/30/02 WATER 1000.0 ug/L	GEC-3 330067 01/30/02 WATER 500.0 ug/L	GEC-4 330068 01/30/02 WATER 200.0 ug/L	GEC-5 330069 01/30/02 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC/MS)									
Chloromethane	30	0.4 U	0.4 U	0.4 U	82 U	430 U	160 U	86 U	0.3 U
Bromomethane	10	0.6 U	0.6 U	0.6 U	52 U	320 U	100 U	64 U	0.2 U
VinylChloride	5	0.5 U	0.5 U	0.5 U	850	290 U	3,800	2,600	0.2 U
Chloroethane	NS	0.4 U	0.4 U	0.4 U	70 U	480 U	10,000	7,300	23
^ MethyleneChloride	3	1.0 U	1.0 U	1.0 U	50,000	110,000	82,000	19,000	1 U
Trichlorofluoromethane	NS	0.3 U	0.3 U	0.3 U	88 U	410 U	180 U	82 U	0.4 U
1,1-Dichloroethene	2	0.5 U	0.5 U	0.5 U	170	290 U	120 U	58 U	0.2 U
^ 1,1-Dichloroethane	50	0.3 U	0.3 U	0.3 U	2,100	3,500	24,000	7,500	1.8
trans-1,2-Dichloroethene	100	0.5 U	0.5 U	0.5 U	50 U	230 U	100 U	46 U	1.2
^ cis-1,2-Dichloroethene	70	0.4 U	0.4 U	0.4 U	5,400	6,000	44,000	23,000	0.3
Chloroform	6	20	0.4 U	0.4 U	48 U	250 U	95 U	50 U	0.2 U
1,2-Dichloroethane	2	0.3 U	0.3 U	0.3 U	560	1,700	100 U	72 U	0.2 U
1,1,1-Trichloroethane	30	0.3 U	0.3 U	0.3 U	670	370	1,600	52 U	0.3 U
CarbonTetrachloride	2	0.4 U	0.4 U	0.4 U	62 U	300 U	120 U	60 U	0.2 U
Bromodichloromethane	1	6.3	0.2 U	0.2 U	40 U	200 U	80 U	40 U	0.2 U
1,2-Dichloropropane	1	0.1 U	0.1 U	0.1 U	4,500	9,100	14,000	4,700	0.2 U
(1) cis-1,3-Dichloropropene	NS	0.3 U	0.3 U	0.3 U	42 U	300 U	85 U	60 U	0.2 U
Trichloroethene	1	0.3 U	0.7	0.3 U	2,000	3,000	500	41	0.3 U
DibromoChloromethane	10	0.9	0.3 U	0.3 U	32 U	270 U	65 U	54 U	0.1 U
1,1,2-Trichloroethane	3	0.3 U	0.3 U	0.3 U	50 U	280 U	100 U	56 U	0.2 U
Benzene	1	0.3 U	0.3 U	0.3 U	48 U	290 U	95 U	58 U	0.2 U
(1) trans-1,3-Dichloropropene	NS	0.3 U	0.3 U	0.3 U	38 U	280 U	75 U	56 U	0.2 U
2-ChloroethylVinylEther	NS	0.4 U	0.4 U	0.4 U	100 U	470 U	210 U	94 U	0.4 U
Bromoform	4	0.3 U	0.3 U	0.3 U	45 U	290 U	90 U	58 U	0.2 U
Tetrachloroethene	1	0.1 U	14	0.1 U	2,700	1,600	140 U	48 U	0.3 U
^ 1,1,2,2-Tetrachloroethane	1	0.3 U	0.3 U	0.3 U	30 U	310 U	60 U	62 U	0.1 U
Toluene	1,000	0.3 U	0.3 U	0.3 U	1,700	2,200	7,200	4,900	0.2 U
^ Chlorobenzene	50	0.2 U	0.2 U	0.2 U	38 U	210 U	75 U	42 U	0.2 U
Ethylbenzene	700	0.2 U	0.2 U	0.2 U	120	150 U	95 U	30 U	0.2 U
^ Xylene(Total)	1,000	0.3 U	0.3 U	0.3 U	570	550	95 U	36 U	0.2 U
^ MTBE	70	NR	NR	NR	48 U	260 U	95 U	52 U	0.2 U
n-Propanol	NS	NR	NR	NR	100,000	500,000 U	120,000 U	100,000 U	250 U
Total Confident Conc. VOAs (s)		27.2	14.7	0	171,340	138,020	187,100	69,041	26
Total Estimated Conc. VOA TICs (s)		0	0	0	41,200	76,300	9,900	22,420	20

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria

- (1) Values listed reflect the combined standards for the cis and trans isomers.
- (2) The Action Levels listed reflect current STL Edison knowledge of the standard guidance for the user. Please consult appropriate regulations and codes.
- ^ Standard is a revision to the Class IIA ground water quality standard based on maximum contaminant level changes and the February 5, 1997 policy.

Qualifiers:

- U - The compound was not detected at the indicated concentration.
- J - Data indicates the presence of a compound that meets the identification criteria. The concentration given is an approximate value.
- B - The analyte was found in the laboratory blank as well as the sample. This indicates poor precision.
- NR - Not analyzed.
- NS - No standard has been developed by the Department.

TABLE 5
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-1				MW-2			
		3810-001 7/8/98 WATER	152040 8/19/99 WATER	327175 01/15/02 WATER	354106 06/04/02 WATER	3810-002 7/8/98 WATER	152041 8/19/99 WATER	327176 01/15/02 WATER	354111 06/04/02 WATER
SEMOVOLATILE COMPOUNDS (GC/MS)									
N-Nitrosodimethylamine	20	NR	45 U	32 U	NR	NR	1.7 U	0.6 U	NR
bis(2-Chloroethyl)ether	10	NR	37 U	31 U	NR	NR	1.4 U	0.6 U	NR
1,3-Dichlorobenzene	600	NR	79 U	39 U	NR	NR	3.0 U	0.8 U	NR
1,4-Dichlorobenzene	75	NR	82 U	41 U	NR	NR	3.1 U	0.8 U	NR
1,2-Dichlorobenzene	600	NR	68 U	42 U	NR	NR	2.6 U	0.9 U	NR
bis(2-chloroisopropyl)ether	300	NR	46 U	26 U	NR	NR	1.7 U	0.5 U	NR
N-Nitroso-di-n-propylamine	20	NR	66 U	62 U	NR	NR	2.5 U	1.3 U	NR
Hexachloroethane	10	NR	120 U	44 U	NR	NR	4.6 U	0.9 U	NR
Nitrobenzene	10	NR	27 U	38 U	NR	NR	1.0 U	0.8 U	NR
Isophorone	100	NR	590	38	NR	NR	1.0 U	0.2 U	NR
bis(2-Chloroethoxy)methane	NS	NR	44 U	33 U	NR	NR	1.7 U	0.7 U	NR
1,2,4-Trichlorobenzene	9	NR	63 U	39 U	NR	NR	2.4 U	0.8 U	NR
▲ Naphthalene	300	NR	42 U	36	NR	NR	24	1.4	NR
Hexachlorobutadiene	1	NR	100 U	58 U	NR	NR	3.9 U	1.2 U	NR
▲ 2-Methylnaphthalene	100	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclopentadiene	50	NR	66 U	85 U	NR	NR	2.5 U	1.7 U	NR
2-Chloronaphthalene	NS	NR	30 U	41 U	NR	NR	1.2 U	0.8 U	NR
Dimethylphthalate	NS	NR	27 U	28 U	NR	NR	1.0 U	0.6 U	NR
Acenaphthylene	NS	NR	50 U	30 U	NR	NR	1.9 U	0.6 U	NR
(1) 2,6-Dinitrotoluene	NS	NR	39 U	20 U	NR	NR	1.5 U	0.4 U	NR
Acenaphthene	400	NR	47 U	29 U	NR	NR	1.8 U	0.6 U	NR
(1) 2,4-Dinitrotoluene	10	NR	46 U	13 U	NR	NR	1.8 U	0.3 U	NR
Diethylphthalate	5,000	NR	470	410	NR	NR	2.0	13	NR
4-Chlorophenyl-phenylether	NS	NR	47 U	43 U	NR	NR	1.8 U	0.9 U	NR
Fluorene	300	NR	34 U	31 U	NR	NR	1.3 U	0.6 U	NR
N-Nitrosodiphenylamine	20	NR	22 U	26 U	NR	NR	0.8 U	0.5 U	NR
4-Bromophenyl-phenylether	NS	NR	37 U	98 U	NR	NR	1.4 U	2 U	NR
Hexachlorobenzene	10	NR	36 U	57 U	NR	NR	1.4 U	1.2 U	NR
Phenanthrene	NS	NR	29 U	25 U	NR	NR	1.1 U	0.5 U	NR
Anthracene	2,000	NR	33 U	21 U	NR	NR	1.2 U	0.4 U	NR
Di-n-butylphthalate	900	NR	35 U	21 U	NR	NR	1.3 U	0.4 U	NR
Fluoranthene	300	NR	34 U	21 U	NR	NR	1.3 U	0.4 U	NR
Pyrene	200	NR	37 U	21 U	NR	NR	1.4 U	0.4 U	NR
Benzidine	50	NR	320	1,200 U	NR	NR	12 U	26 U	NR
Butylbenzylphthalate	100	NR	29 U	20 U	NR	NR	1.1 U	0.4 U	NR
3,3'-Dichlorobenzidine	60	NR	190 U	66 U	NR	NR	7.4 U	1.4 U	NR
Benzo(a)anthracene	NS	NR	30 U	19 U	NR	NR	1.2 U	0.4 U	NR
Chrysene	NS	NR	40 U	25 U	NR	NR	1.6 U	0.5 U	NR
bis(2-Ethylhexyl)phthalate	30	NR	230 U	22 U	NR	NR	48	17 B	NR
Di-n-octylphthalate	100	NR	24 U	6.6 U	NR	NR	0.9 U	0.1 U	NR
Benzo(b)fluoranthene	NS	NR	30 U	14 U	NR	NR	1.2 U	0.3 U	NR
Benzo(k)fluoranthene	NS	NR	37 U	42 U	NR	NR	1.4 U	0.8 U	NR
Benzo(a)pyrene	NS	NR	34 U	7.6 U	NR	NR	1.3 U	0.2 U	NR
Indeno(1,2,3-cd)pyrene	NS	NR	42 U	7.1 U	NR	NR	1.6 U	0.1 U	NR
Dibenz(a,h)anthracene	NS	NR	37 U	32 U	NR	NR	1.4 U	0.7 U	NR
Benzo(g,h)perylene	NS	NR	47 U	18 U	NR	NR	1.8 U	0.4 U	NR
Total Confident Conc. BNAs (s)			1,060	484			74	14	
Total Estimated Conc. BNA TICs (s)			196,690	177,080			6740	554	

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.

- (1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.
- (2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.
- ^ A value is a revision to the Class IIA ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.

Qualifiers:

- U - The compound was not detected at the indicated concentration.
- J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.
- B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
- NR - Not analyzed.
- NS - No standard has been developed by the Department.

TABLE 5
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-3				MW-4		MW-5	
		3810-003 7/8/98	152042 8/19/99	327177 01/15/02	354111 06/04/02	152043 8/19/99	327180 01/15/02	152044 8/19/99	327179 01/15/02
		WATER 1 ug/L	WATER 2.0 ug/L	WATER 1.0 ug/L	WATER 1.0 ug/L	WATER 2.0 ug/L	WATER 5.0 ug/L	WATER 2.0 ug/L	WATER 5.0 ug/L
SEMICVOLATILE COMPOUNDS (GC/MS)									
N-Nitrosodimethylamine	20	2 U	1.8 U	0.6 U	NR	0.8 U	0.7 U	1.7 U	3.3 U
bis(2-Chloroethyl)ether	10	2 U	1.5 U	0.6 U	NR	0.7 U	0.6 U	1.4 U	3.2 U
1,3-Dichlorobenzene	600	2 U	3.2 U	0.8 U	NR	1.5 U	0.8 U	3.0 U	4.0 U
1,4-Dichlorobenzene	75	2 U	3.3 U	0.8 U	NR	1.5 U	0.9 U	3.2 U	4.2 U
1,2-Dichlorobenzene	600	2 U	2.8 U	0.9 U	NR	1.3 U	0.9 U	2.6 U	4.4 U
bis(2-chloroisopropyl)ether	300	2 U	1.8 U	0.5 U	NR	0.9 U	0.5 U	1.8 U	-2.6 U
N-Nitroso-di-n-propylamine	20	2 U	2.6 U	1.2 U	NR	1.2 U	1.3 U	2.5 U	6.4 U
Hexachloroethane	10	2 U	4.9 U	0.9 U	NR	2.3 U	0.9 U	4.7 U	4.5 U
Nitrobenzene	10	2 U	1.1 U	0.8 U	NR	0.5 U	0.8 U	1.0 U	3.9 U
Isophorone	100	2 U	3.8	0.2 U	NR	0.5 U	0.2 U	7.1	2.0
bis(2-Chlorooxy)methane	NS	2 U	1.8 U	0.7 U	NR	0.8 U	0.7 U	1.7 U	3.4 U
1,2,4-Trichlorobenzene	9	2 U	2.5 U	0.8 U	NR	1.2 U	0.8 U	2.4 U	4.0 U
Naphthalene	300	5.68	1.8	1.6	NR	0.8 U	0.7 U	43	83
Hexachlorobutadiene	1	2 U	4.1 U	1.2 U	NR	1.9 U	1.2 U	3.9 U	6 U
2-Methylnaphthalene	100	8.27	NR						
Hexachlorocyclopentadiene	50	2 U	2.7 U	1.7 U	NR	1.2 U	1.8 U	2.6 U	8.8 U
2-Chloronaphthalene	NS	2 U	1.2 U	0.8 U	NR	0.6 U	0.8 U	1.2 U	4.2 U
Dimethylphthalate	NS	2 U	1.1 U	0.6 U	NR	0.5 U	0.6 U	1.0 U	2.8 U
Acenaphthylene	NS	2 U	2.0	0.6 U	NR	0.9 U	0.6 U	2.0 U	3.0 U
(1) 2,6-Dinitrotoluene	NS	2 U	1.6 U	0.4 U	NR	0.7 U	0.4 U	1.5 U	2.1 U
Acenaphthene	400	2 U	1.9 U	0.6 U	NR	0.9 U	0.6 U	3.2	3.0 U
(1) 2,4-Dinitrotoluene	10	2 U	1.9 U	0.3 U	NR	0.9 U	0.3 U	1.8 U	1.3 U
Diethylphthalate	5,000	3.49	1.4	1.8	NR	0.5 U	0.5 U	1.0 U	2.3 U
4-Chlorophenyl-phenylether	NS	2 U	1.9 U	0.9 U	NR	0.9 U	0.9 U	1.8 U	4.4 U
Fluorene	300	2 U	1.4 U	0.7	NR	0.6 U	0.6 U	3.3	3.2 U
N-Nitrosodiphenylamine	20	2 U	0.9 U	0.5 U	NR	0.4 U	0.6 U	0.8 U	2.7 U
4-Bromophenyl-phenylether	NS	2 U	1.5 U	2 U	NR	0.7 U	2.0 U	1.4 U	10 U
Hexachlorobenzene	10	2 U	1.4 U	1.1 U	NR	0.7 U	1.2 U	1.4 U	5.8 U
Phenanthrene	NS	2.23	1.3	0.8	NR	0.6 U	0.5 U	2.6	2.6 U
Anthracene	2,000	2 U	1.3 U	0.4 U	NR	0.6 U	0.4 U	1.3 U	2.2 U
Di-n-butylphthalate	900	2 U	1.4 U	0.4 U	NR	0.7 U	0.4 U	1.4 U	2.2 U
Fluoranthene	300	2 U	1.4 U	0.4 U	NR	0.6 U	0.4 U	1.3 U	2.2 U
Pyrene	200	2 U	1.5 U	0.4 U	NR	0.7 U	0.4 U	1.4 U	2.2 U
Benzidine	50	2 U	13 U	25 U	NR	6.0 U	26 U	12 U	130 U
Butylbenzylphthalate	100	2 U	1.2 U	0.4 U	NR	0.5 U	0.4 U	1.1 U	2.1 U
3,3'-Dichlorobenzidine	60	2 U	7.9 U	1.3 U	NR	3.6 U	1.4 U	7.5 U	6.8 U
Benz(a)anthracene	NS	2 U	1.2 U	0.4 U	NR	0.6 U	0.4 U	1.2 U	2.0 U
Chrysene	NS	2 U	1.6 U	0.5 U	NR	0.8 U	0.5 U	1.6 U	2.6 U
bis(2-Ethylhexyl)phthalate	30	2 U	9.2 U	1.2 B	NR	9.4	0.6 B	8.8 U	2.3 U
Di-n-octylphthalate	100	2 U	1.0 U	0.1 U	NR	0.4 U	0.1 U	0.9 U	0.7 U
Benzo(b)fluoranthene	NS	2 U	1.2 U	0.3 U	NR	0.6 U	0.3 U	1.2 U	1.4 U
Benzo(k)fluoranthene	NS	2 U	1.5 U	0.8 U	NR	0.7 U	0.9 U	1.4 U	4.3 U
Benzo(a)pyrene	NS	2 U	1.4 U	0.2 U	NR	0.6 U	0.2 U	1.3 U	0.8 U
Indeno(1,2,3-cd)pyrene	NS	2 U	1.7 U	0.1 U	NR	0.8 U	0.2 U	1.6 U	0.7 U
Dibenz(a,h)anthracene	NS	2 U	1.5 U	0.6 U	NR	0.7 U	0.7 U	1.4 U	3.3 U
Benzo(g,h,i)perylene	NS	2 U	1.9 U	0.4 U	NR	0.9 U	0.4 U	1.8 U	1.8 U
Total Confident Conc. BNAs (s)		19.67	8.3	4.9		9.4	0	59.2	85
Total Estimated Conc. BNA TICs (s)		5481.6	3227	958		0	0	2034	1670

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.

(1) Values listed reflect the combined standards for the cis and trans isomers.

(2) The Action Levels listed reflect current STL Edison knowledge of the guidance for the user. Please consult appropriate regulations and clearances.

^ Value is a revision to the Class IIA ground water quality standard based on maximum contaminant level changes and the February 5, 1997 policy.

Qualifiers:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates poor detection.

NR - Not analyzed.

NS - No standard has been developed by the Department.

TABLE 5
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	MW-6 152045 8/19/99 WATER 1.0 ug/L	MW-7 152046 8/19/99 WATER 1.0 ug/L	PZ-1 168783 01/15/02 WATER 1.0 ug/L	PZ-2 168784 11/11/99 WATER 1.0 ug/L	PZ-3 179239 11/11/99 WATER NR	PZ-4 179240 1/13/00 WATER NR	PZ-5 179241 1/13/00 WATER NR
SEMICVOLATILE COMPOUNDS (GC/MS)								
N-Nitrosodimethylamine	20	0.9 U	0.8 U	0.7 U	NR	NR	NR	NR
bis(2-Chloroethyl)ether	10	0.7 U	0.7 U	0.7 U	NR	NR	NR	NR
1,3-Dichlorobenzene	600	1.5 U	1.4 U	0.8 U	NR	NR	NR	NR
1,4-Dichlorobenzene	75	1.6 U	1.5 U	0.9 U	NR	NR	NR	NR
1,2-Dichlorobenzene	600	1.3 U	1.2 U	0.9 U	NR	NR	NR	NR
bis(2-chloroisopropyl)ether	300	0.9 U	0.8 U	0.5 U	NR	NR	NR	NR
N-Nitroso-di-n-propylamine	20	1.2 U	1.2 U	1.3 U	NR	NR	NR	NR
Hexachloroethane	10	2.3 U	2.2 U	0.9 U	NR	NR	NR	NR
Nitrobenzene	10	0.5 U	0.5 U	0.8 U	NR	NR	NR	NR
Isophorone	100	0.5 U	0.5 U	0.2 U	NR	NR	NR	NR
bis(2-Chloroethoxy)methane	NS	0.8 U	0.8 U	0.7 U	NR	NR	NR	NR
1,2,4-Trichlorobenzene	9	1.2 U	1.1 U	0.8 U	NR	NR	NR	NR
Naphthalene	300	0.8 U	0.8 U	0.7 U	NR	NR	NR	NR
Hexachlorobutadiene	1	1.9 U	1.8 U	1.2 U	NR	NR	NR	NR
▲ 2-Methylnaphthalene	100	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclopentadiene	50	1.2 U	1.2 U	1.8 U	NR	NR	NR	NR
2-Chloronaphthalene	NS	0.6 U	0.6 U	0.9 U	NR	NR	NR	NR
Dimethylphthalate	NS	0.5 U	0.5 U	0.6 U	NR	NR	NR	NR
Acenaphthylene	NS	1.0 U	0.9 U	0.6 U	NR	NR	NR	NR
(1) 2,6-Dinitrotoluene	NS	0.7 U	0.7 U	0.4 U	NR	NR	NR	NR
Acenaphthene	400	0.9 U	0.9 U	0.6 U	NR	NR	NR	NR
(1) 2,4-Dinitrotoluene	10	0.9 U	0.8 U	0.3 U	NR	NR	NR	NR
Diethylphthalate	5,000	0.5 U	0.5 U	0.5 U	NR	NR	NR	NR
4-Chlorophenyl-phenylether	NS	0.9 U	0.8 U	0.9 U	NR	NR	NR	NR
Fluorene	300	0.6 U	0.6 U	0.7 U	NR	NR	NR	NR
N-Nitrosodiphenylamine	20	0.4 U	0.4 U	0.6 U	NR	NR	NR	NR
4-Bromophenyl-phenylether	NS	0.7 U	0.7 U	2.1 U	NR	NR	NR	NR
Hexachlorobenzene	10	0.7 U	0.6 U	1.2 U	NR	NR	NR	NR
Phenanthrene	NS	0.8 U	0.5 U	0.5 U	NR	NR	NR	NR
Anthracene	2,000	0.6 U	0.6 U	0.5 U	NR	NR	NR	NR
Di-n-butylphthalate	900	0.7 U	0.9	0.5 U	NR	NR	NR	NR
Fluoranthene	300	0.6 U	0.6 U	0.4 U	NR	NR	NR	NR
Pyrene	200	0.7 U	0.7 U	0.5 U	NR	NR	NR	NR
Benzidine	50	6.0 U	5.8 U	27 U	NR	NR	NR	NR
Butylbenzylphthalate	100	0.5 U	0.5 U	0.4 U	NR	NR	NR	NR
3,3'-Dichlorobenzidine	60	3.7 U	3.5 U	1.4 U	NR	NR	NR	NR
Benzo(a)anthracene	NS	0.6 U	0.6 U	0.4 U	NR	NR	NR	NR
Chrysene	NS	0.8 U	0.7 U	0.5 U	NR	NR	NR	NR
bis(2-Ethyhexyl)phthalate	30	4.3 U	4.1 U	1.7 B	NR	NR	NR	NR
Di-n-octylphthalate	100	0.5 U	0.4 U	0.1 U	NR	NR	NR	NR
Benzo(b)fluoranthene	NS	0.6 U	0.6 U	0.3 U	NR	NR	NR	NR
Benzo(k)fluoranthene	NS	0.7 U	0.7 U	0.9 U	NR	NR	NR	NR
Benzo(a)pyrene	NS	0.7 U	0.6 U	0.2 U	NR	NR	NR	NR
Indeno(1,2,3-cd)pyrene	NS	0.8 U	0.8 U	0.2 U	NR	NR	NR	NR
Dibenz(a,h)anthracene	NS	0.7 U	0.7 U	0.7 U	NR	NR	NR	NR
Benzo(g,h,i)perylene	NS	0.9 U	0.9 U	0.4 U	NR	NR	NR	NR
Total Confident Conc. BNAs (s)		0	0.9	0				
Total Estimated Conc. BNA TICs (s)		12	12	0				

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Crt

(1) Values listed reflect the combined standards for the cis and trans isom

(2) The Action Levels listed reflect current STL Edison knowledge of the s guidance for the user. Please consult appropriate regulations and clea

▲ ^ Value is a revision to the Class IIA ground water quality standard bas maximum contaminant level changes and the February 5, 1997 policy

Qualifiers:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The rt The concentration given is an approximate value.

B - The analysis was found in the laboratory blank as well as the sample. This indicates por

NR - Not analyzed.

NS - No standard has been developed by the Department.

TABLE 5
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria (ug/l)	PZ-6 179242 1/13/00 WATER	PZ-7 179243 1/13/00 WATER	PZ-8 179244 1/13/00 WATER	GEC-1 330065 01/30/02 WATER 100.0 ug/L	GEC-2 330066 01/30/02 WATER 200.0 ug/L	GEC-3 330067 01/30/02 WATER 100.0 ug/L
SEMVOLATILE COMPOUNDS (GC/MS)							
N-Nitrosodimethylamine	20	NR	NR	NR	66 U	83 U	130 U
bis(2-Chloroethyl)ether	10	NR	NR	NR	64 U	80 U	120 U
1,3-Dichlorobenzene	600	NR	NR	NR	81 U	100 U	160 U
1,4-Dichlorobenzene	75	NR	NR	NR	85 U	110 U	170 U
1,2-Dichlorobenzene	600	NR	NR	NR	88 U	110 U	170 U
bis(2-chloroisopropyl)ether	300	NR	NR	NR	53 U	67 U	100 U
N-Nitroso-di-n-propylamine	20	NR	NR	NR	130 U	160 U	250 U
Hexachloroethane	10	NR	NR	NR	91 U	110 U	180 U
Nitrobenzene	10	NR	NR	NR	80 U	100 U	160 U
Isophorone	100	NR	NR	NR	10,000	14,000	46 U
bis(2-Chloroethoxy)methane	NS	NR	NR	NR	68 U	85 U	130 U
1,2,4-Trichlorobenzene	9	NR	NR	NR	81 U	100 U	160 U
^ Naphthalene	300	NR	NR	NR	67 U	84 U	130 U
Hexachlorobutadiene	1	NR	NR	NR	120 U	150 U	240 U
2-Methylnaphthalene	100	NR	NR	NR	NR	NR	NR
Hexachlorocyclopentadiene	50	NR	NR	NR	180 U	220 U	350 U
2-Chloronaphthalene	NS	NR	NR	NR	85 U	110 U	170 U
Dimethylphthalate	NS	NR	NR	NR	57 U	72 U	110 U
Acenaphthylene	NS	NR	NR	NR	62 U	77 U	120 U
(1) 2,6-Dinitrotoluene	NS	NR	NR	NR	42 U	53 U	83 U
Acenaphthene	400	NR	NR	NR	61 U	76 U	120 U
(1) 2,4-Dinitrotoluene	10	NR	NR	NR	26 U	33 U	52 U
Diethylphthalate	5,000	NR	NR	NR	8,000	5,300	37,000
4-Chlorophenyl-phenylether	NS	NR	NR	NR	180 U	22,000	9.4
Fluorene	300	NR	NR	NR	89 U	110 U	93 U
N-Nitrosodiphenylamine	20	NR	NR	NR	65 U	81 U	130 U
4-Bromophenyl-phenylether	NS	NR	NR	NR	55 U	69 U	110 U
Hexachlorobenzene	10	NR	NR	NR	200 U	260 U	400 U
Phenanthrene	NS	NR	NR	NR	120 U	150 U	230 U
Anthracene	2,000	NR	NR	NR	52 U	65 U	100 U
Di-n-butylphthalate	900	NR	NR	NR	45 U	56 U	88 U
Fluoranthene	300	NR	NR	NR	44 U	55 U	85 U
Pyrene	200	NR	NR	NR	45 U	56 U	88 U
Benzidine	50	NR	NR	NR	2,600 U	3,300 U	5,100 U
Butylbenzylphthalate	100	NR	NR	NR	42 U	53 U	83 U
3,3'-Dichlorobenzidine	60	NR	NR	NR	140 U	170 U	270 U
Benz(a)anthracene	NS	NR	NR	NR	40 U	51 U	79 U
Chrysene	NS	NR	NR	NR	52 U	65 U	100 U
bis(2-Ethylhexyl)phthalate	30	NR	NR	NR	47 U	59 U	92 U
Di-n-octylphthalate	100	NR	NR	NR	14 U	17 U	27 U
Benzo(b)fluoranthene	NS	NR	NR	NR	29 U	36 U	56 U
Benzo(k)fluoranthene	NS	NR	NR	NR	87 U	110 U	170 U
Benzo(a)pyrene	NS	NR	NR	NR	16 U	20 U	31 U
Indeno(1,2,3-cd)pyrene	NS	NR	NR	NR	15 U	19 U	29 U
Dibenz(a,h)anthracene	NS	NR	NR	NR	67 U	84 U	130 U
Benzo(g,h,i)perylene	NS	NR	NR	NR	37 U	47 U	73 U
Total Confident Conc. BNAs (s)					18,000	19,300	37,000
Total Estimated Conc. BNA TICs (s)					275,700	319,100	151,200
							22,100
							7.5
							59

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.

(1) Values listed reflect the combined standards for the cis and trans isomeric forms.

(2) The Action Levels listed reflect current STL Edison knowledge of the standard guidance for the user. Please consult appropriate regulations and codes.

^ A value is a revision to the Class IIA ground water quality standard based on maximum contaminant level changes and the February 5, 1997 policy.

Qualifiers:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates positive detection.

NR - Not analyzed.

NS - No standard has been developed by the Department.

TABLE 5
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria	MW-1					MW-2				
		3810-001 7/8/98 WATER	152040 8/19/99 WATER	327175 01/15/02 WATER	354106 06/04/02 WATER	NA/NA/NA mg/l	100.0/NA/NA ug/L	3810-002 7/8/98 WATER	152041 8/19/99 WATER	327176 01/15/02 WATER	354111 06/04/02 WATER
WET CHEMISTRY											
Total Dissolved Solids - mg/l	500,000	NR	NR	1980	NR	NR	NR	NR	497	NR	
METHANE, ETHANE, ETHENE											
Methane	NS	NR	NR	NR	5500	NR	NR	NR	NR	1,600	
Ethene	NS	NR	NR	NR	500 U	NR	NR	NR	NR	120 U	
^ Ethane	100	NR	NR	NR	500 U	NR	NR	NR	NR	120 U	
METALS ANALYSIS											
Iron	300	NR	NR	NR	47200	NR	NR	NR	NR	683,000	
Manganese	50	NR	NR	NR	2680	NR	NR	NR	NR	3,950	
NITRATE											
Nitrate	10,000	NR	NR	NR	100 U	NR	NR	NR	NR	100 U	
SULFATE											
Sulfate	250,000	NR	NR	NR	5000 U	NR	NR	NR	NR	16,000	

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.

^ A Value is a revision to the Class IIA ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.

Qualifiers:

U - The compound was not detected at the indicated concentration.

NR - Not analyzed.

NA - Not applicable.

NS - No standard has been developed by the Department.

TABLE 5
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria	MW-3					MW-4			MW-5		
		3810-003	152042 7/8/98 WATER	327177 8/19/99 WATER	354112 01/15/02 WATER	NA/NA/NA mg/l	152043 8/19/99 WATER	327180 01/15/02 WATER	NA/NA/NA mg/l	152044 8/19/99 WATER	327178 01/15/02 WATER	NA/NA/NA mg/l
WET CHEMISTRY												
Total Dissolved Solids - mg/l		500,000	NR	NR	1480	NR	NR	895	NR	NR	NR	1260
METHANE, ETHANE, ETHENE												
Methane		NS	NR	NR	NR	8,800	NR	NR	NR	NR	NR	NR
Ethane		NS	NR	NR	NR	500 U	NR	NR	NR	NR	NR	NR
^ Ethane		100	NR	NR	NR	500 U	NR	NR	NR	NR	NR	NR
METALS ANALYSIS												
Iron		300	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Manganese		50	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
NITRATE												
Nitrate		10,000	NR	NR	NR	NR	100 U	NR	NR	NR	NR	NR
SULFATE												
Sulfate		250,000	NR	NR	NR	NR	10,500	NR	NR	NR	NR	NR

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.

^ Value is a revision to the Class IIA ground water quality standard based on maximum contaminant level changes and the February 5, 1997 policy.

Qualifiers:

U - The compound was not detected at the indicated concentration.

NR - Not analyzed.

NA - Not applicable.

NS - No standard has been developed by the Department.

TABLE 5
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor (M,E,E / Nitrate / Sulfate) Units	New Jersey Higher of POPs and Ground Water Quality Criteria	MW-6 152045 8/19/99 WATER	MW-7 152046 8/19/99 WATER	PZ-1 168783 11/11/99 WATER NA/NA/NA mg/l	PZ-2 168784 11/11/99 WATER 1.0/NA/NA ug/L	PZ-3 179239 1/13/00 WATER 1.0/1.0/2.0 ug/L	PZ-4 179240 1/13/00 WATER 1.0/1.0/1.0 ug/L	PZ-5 179241 1/13/00 WATER 1.0/1.0/2.0 ug/L
WET CHEMISTRY								
Total Dissolved Solids - mg/l		500,000	NR	NR	525	NR	NR	NR
METHANE, ETHANE, ETHENE								
Methane	NS	NR	NR	NR	NR	NR	5.9	9.0
Ethene	NS	NR	NR	NR	5.0 U	5.0 U	5.0 U	5.0 U
^ Ethane	100	NR	NR	NR	5.0 U	5.0 U	5.0 U	5.0 U
METALS ANALYSIS								
Iron	300	NR	NR	NR	NR	NR	156,000	142,000
Manganese	50	NR	NR	NR	NR	NR	NR	490,000
NITRATE								
Nitrate	10,000	NR	NR	NR	NR	NR	600	830
SULFATE								
Sulfate	250,000	NR	NR	NR	NR	NR	61,200	38,200
								71,500

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria.

^ Value is a revision to the Class IIA ground water quality standard based on maximum contaminant level changes and the February 5, 1997 policy.

Qualifiers:

U - The compound was not detected at the indicated concentration.

NR - Not analyzed.

NA - Not applicable.

NS - No standard has been developed by the Department.

TABLE 5
COMPARISON OF GROUNDWATER DATA: 1998 TO 2002
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Higher of PQLs and Ground Water Quality Criteria	PZ-6	PZ-7	PZ-8	GEC-1		GEC-2	GEC-3
		179242 1/13/00 WATER 1.0/1.0/2.0 ug/L	179243 1/13/00 WATER 1.0/1.0/2.0 ug/L	179244 1/13/00 WATER 2.0/1.0/2.0 ug/L	330065 01/30/02 WATER 100.0/NA/NA ug/l	354107 06/04/02 WATER NA/NA/NA mg/l	330066 01/30/02 WATER 10.0/NA/NA ug/L	354110 06/04/02 WATER NA/NA/NA mg/l
WET CHEMISTRY								
Total Dissolved Solids - mg/l	500,000	NR	NR	NR	NR	NR	2240	NR
METHANE, ETHANE, ETHENE								
Methane	NS	26	32	100	9,400	NR	1,200	
Ethene	NS	5.0	U	10	500 U	NR	150	
^ Ethane	100	5.0	U	10	500 U	NR	50 U	NR
METALS ANALYSIS								
Iron	300	842,000	1,040,000	158,000	910,000	NR	469,000	NR
Manganese	50	NR	NR	NR	56,400	NR	9,620	NR
NITRATE								
Nitrate	10,000	150	150	490	NR	100 U	100 U	NR
SULFATE								
Sulfate	250,000	58,800	38,800	45,200	NR	33,800	NR	5,000 U

Notes: Concentrations in **BOLD** exceed New Jersey Groundwater Quality Criteria

^ A Value is a revision to the Class II ground water quality standard based on maximum contaminant level changes and the February 5, 1997 policy

Qualifiers:

U - The compound was not detected at the indicated concentration.

NR - Not analyzed.

NA - Not applicable.

NS - No standard has been developed by the Department.

APPENDIX D:

Tabular Summary of Soil Analytical Data

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (ug/kg)	#1_UST_AREA 2226-001	#2_LOADING_BAY 2226-002	#3_LOADING_BAY 2226-003	#4_LOADING_BAY 2226-004	#6_DISCHARGE_AREA 2226-006	#7_DISCHARGE_AREA 2226-007	#8_TRUCK_PAD 2226-008
Sampling Date				5/4/98	5/4/98	5/4/98	5/4/98	5/4/98	5/4/98	5/4/98
Matrix				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Dilution Factor				1	1	1	1	1	1	1
Units				ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
VOLATILE COMPOUNDS (GC/MS)										
(1)	Chloromethane	520,000	1,000,000	10,000	NR	724 U	715 U	758 U	791 U	730 U
	Bromomethane	79,000	1,000,000	1,000	NR	724 U	715 U	758 U	791 U	730 U
	VinylChloride	2,000	7,000	10,000	NR	724 U	715 U	758 U	791 U	730 U
	Chloethane	NS	NS	NS	NR	724 U	715 U	758 U	791 U	730 U
	MethyleneChloride	49,000	210,000	1,000	NR	724 U	715 U	758 U	791 U	730 U
	Trichlorofluoromethane	NS	NS	NS	NR	724 U	715 U	758 U	791 U	730 U
	1,1-Dichloroethene	8,000	150,000	10,000	NR	724 U	715 U	758 U	791 U	730 U
	Acetone	1,000,000	1,000,000	100,000	NR	2900 U	2860 U	3030 U	3160 U	2920 U
	1,1-Dichloroethane	570,000	1,000,000	10,000	NR	724 U	715 U	758 U	791 U	730 U
	2-Butanone(MEK)	1,000,000	1,000,000	50,000	NR	2900 U	2860 U	3030 U	3160 U	2920 U
	trans-1,2-Dichloroethene	1,000,000	1,000,000	50,000	NR	724 U	715 U	758 U	791 U	730 U
	cis-1,2-Dichloroethene	79,000	1,000,000	1,000	NR	724 U	715 U	758 U	791 U	730 U
	Chloroform	19,000	28,000	1,000	NR	724 U	715 U	758 U	791 U	730 U
	1,2-Dichloroethane	6,000	24,000	1,000	NR	724 U	715 U	758 U	791 U	730 U
	1,1,1-Trichloroethane	210,000	1,000,000	50,000	NR	724 U	715 U	758 U	791 U	730 U
	CarbonTetrachloride	2,000	4,000	1,000	NR	724 U	715 U	758 U	791 U	730 U
	Bromodichloromethane	11,000	46,000	1,000	NR	724 U	715 U	758 U	791 U	730 U
	1,2-Dichloropropane	10,000	43,000	NS	NR	724 U	715 U	758 U	791 U	838 U
	cis-1,3-Dichloropropene	4,000	5,000	1,000	NR	724 U	715 U	758 U	791 U	730 U
	4-Methyl-2-pentanone(MIBK)	1,000,000	1,000,000	50,000	NR	2900 U	2860 U	3030 U	3160 U	2920 U
(1)	Trichloroethene	23,000	54,000	1,000	NR	724 U	433 J	227 J	253 J	2820 U
	Dibromochloromethane	110,000	1,000,000	1,000	NR	724 U	715 U	758 U	791 U	730 U
	1,1,2-Trichloroethane	22,000	420,000	1,000	NR	724 U	715 U	758 U	791 U	730 U
	Benzene	3,000	13,000	1,000	NR	724 U	715 U	758 U	791 U	730 U
	trans-1,3-Dichloropropene	4,000	5,000	1,000	NR	724 U	715 U	758 U	791 U	730 U
	2-ChloroethylVinylEther	NS	NS	NS	NR	724 U	715 U	758 U	791 U	730 U
	Bromoform	86,000	370,000	1,000	NR	724 U	715 U	758 U	791 U	730 U
	Tetrachloroethene	4,000	6,000	1,000	NR	724 U	258 J	758 U	791 U	1710 U
	1,1,2,2-Tetrachloroethane	34,000	70,000	1,000	NR	724 U	715 U	758 U	791 U	730 U
	Toluene	1,000,000	1,000,000	500,000	NR	303 J	445 J	258 J	231 J	1700 U
n-Propanol	Chlorobenzene	37,000	680,000	1,000	NR	724 U	715 U	758 U	791 U	730 U
	Ethylbenzene	1,000,000	1,000,000	100,000	NR	174 J	715 U	758 U	791 U	151 J
	Xylene(Total)	410,000	1,000,000	67,000	NR	612 J	179 J	758 U	791 U	670 J
		NS	NS	NS	NR	NR	NR	NR	NR	NR
	Total Confident Conc. VOAs (s)					1089	1315	485	484	7889
Total Estimated Conc. VOAs TIC's (s)										
					753	0	0	0	935	0

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

- (1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.
(2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.

Qualifiers:

- U** - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

NS - No standard has been developed by the Department.

NR - Not analyzed.

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID	New Jersey Residential	New Jersey Non-Residential	New Jersey Impact to	#9_MIXING_AREA	#10_MIXING_AREA	#11_MIXING_AREA	#12_RR_CAR	#13_DISCHARGE_AREA	#14_TRUCK_PAD	PE-1_6-6.7	
Lab Sample Number	Direct Contact	Direct Contact	Ground Water	2226-009	2226-010	2226-015	2226-011	2226-012	2226-013	142569	
Sampling Date	Soil Cleanup	Soil Cleanup	Soil Cleanup	5/4/98	5/4/98	5/4/98	5/4/98	5/4/98	5/4/98	7/8/99	
Matrix	Criteria (ug/kg)	Criteria (ug/kg)	Criteria (ug/kg)	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
Dilution Factor				1	1	1	1	1	1	100.0	
Units				ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	
VOLATILE COMPOUNDS (GC/MS)											
(1)	Chloromethane	520,000	1,000,000	10,000	781 U	41200 U	948 U	839 U	1020 U	952 U	550 U
	Bromomethane	79,000	1,000,000	1,000	781 U	41200 U	948 U	839 U	1020 U	952 U	550 U
	VinylChloride	2,000	7,000	10,000	781 U	41200 U	948 U	839 U	1020 U	952 U	550 U
	Chlooroethane	NS	NS	NS	781 U	41200 U	948 U	839 U	1020 U	952 U	550 U
	MethyleneChloride	49,000	210,000	1,000	781 U	41200 U	948 U	839 U	1020 U	952 U	550 U
	Trichlorofluoromethane	NS	NS	NS	781 U	41200 U	948 U	839 U	5130 U	952 U	820 U
	1,1-Dichloroethene	8,000	150,000	10,000	781 U	41200 U	948 U	839 U	1020 U	952 U	550 U
	Acetone	1,000,000	1,000,000	100,000	3130 U	165000 U	3790 U	3360 U	39200	3810 U	NR
	1,1-Dichloroethane	570,000	1,000,000	10,000	781 U	41200 U	948 U	839 U	336 J	952 U	1,400 U
	2-Butanone(MEK)	1,000,000	1,000,000	50,000	3130 U	165000 U	3790 U	3360 U	3600 J	3810 U	NR
	trans-1,2-Dichloroethene	1,000,000	1,000,000	50,000	781 U	41200 U	948 U	839 U	1020 U	952 U	1,400 U
	cis-1,2-Dichloroethene	79,000	1,000,000	1,000	NR	NR	NR	NR	NR	NR	1,400 U
	Chloroform	19,000	28,000	1,000	781 U	41200 U	948 U	839 U	1020 U	952 U	1,400 U
	1,2-Dichloroethane	6,000	24,000	1,000	781 U	41200 U	948 U	839 U	1020 U	952 U	1,400 U
	1,1,1-Trichloroethane	210,000	1,000,000	50,000	781 U	41200 U	948 U	839 U	1020 U	952 U	550 U
	CarbonTetrachloride	2,000	4,000	1,000	781 U	41200 U	948 U	839 U	1020 U	952 U	1,400 U
	Bromodichloromethane	11,000	46,000	1,000	781 U	41200 U	948 U	839 U	1020 U	952 U	550 U
	1,2-Dichloropropane	10,000	43,000	NS	1870	48700	948 U	839 U	1090	952 U	270 U
	cis-1,3-Dichloropropene	4,000	5,000	1,000	781 U	41200 U	948 U	839 U	1020 U	952 U	1,400 U
	4-Methyl-2-pentanone(MIBK)	1,000,000	1,000,000	50,000	3130 U	165000 U	3790 U	3360 U	15300	3810 U	NR
	Trichloroethene	23,000	54,000	1,000	1350	140000	2100	251 J	389 J	314 J	270 U
(1)	Dibromochloromethane	110,000	1,000,000	1,000	781 U	41200 U	948 U	839 U	1020 U	952 U	1,400 U
	1,1,2-Trichloroethane	22,000	420,000	1,000	781 U	41200 U	948 U	839 U	1020 U	952 U	820 U
	Benzene	3,000	13,000	1,000	781 U	41200 U	948 U	839 U	1020 U	952 U	590
	trans-1,3-Dichloropropene	4,000	5,000	1,000	781 U	41200 U	948 U	839 U	1020 U	952 U	1,400 U
	2-ChloroethylVinylEther	NS	NS	NS	781 U	41200 U	948 U	839 U	1020 U	952 U	1,400 U
	Bromoform	86,000	370,000	1,000	781 U	41200 U	948 U	839 U	1020 U	952 U	1,100 U
	Tetrachloroethene	4,000	6,000	1,000	1140	658000	1500	839 U	542 J	290 J	270 U
1,1,2-Tetrachloroethane											
Toluene											
Chlorobenzene											
Ethylbenzene											
Xylene(Total)											
n-Propanol											
Total Confident Conc. VOAs (s)				46030	2320700	4843	493	67174	940	32,290	
Total Estimated Conc. VOA TICs (s)				1182900	2000200	0	0	8410	0	168,000	

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

- (1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.
 (2) The Action Levels listed reflect current STI Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.

Qualifiers:

- U** - The compound was not detected at the indicated concentration.
 - J** - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.
 - B** - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
 - NS** - No standard has been developed by the Department.
 - NR** - Not analyzed.

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, N.J.

Sample ID Lab Sample Number	New Jersey Residential Direct Contact	New Jersey Non-Residential Direct Contact	New Jersey Impact to Ground Water	PE-2_6.2-6.7 142570 7/8/99	PE-3_5.2-5.7 142571 7/8/99	PE-4_6.2-6.7 142572 7/8/99	PE-5_5.5-6.0 142573 7/8/99	PE-6_6.2-6.7 142574 7/8/99	SP-1 142575 7/8/99	SP-2 142576 7/8/99	SP-3 142577 7/8/99
Sampling Date	Soil Cleanup Criteria (ug/kg)	Soil Cleanup Criteria (ug/kg)	Soil Cleanup Criteria (ug/kg)	SOIL 50.0 ug/Kg	SOIL	SOIL	SOIL	SOIL	SOIL		
Matrix Dilution Factor Units											
VOLATILE COMPOUNDS (GC/MS)											
Chloromethane	520,000	1,000,000	10,000	610 U	NR	NR	NR	NR	NR	NR	NR
Bromomethane	79,000	1,000,000	1,000	610 U	NR	NR	NR	NR	NR	NR	NR
VinylChloride	2,000	7,000	10,000	610 U	NR	NR	NR	NR	NR	NR	NR
Chloroethane	NS	NS	NS	610 U	NR	NR	NR	NR	NR	NR	NR
MethyleneChloride	49,000	210,000	1,000	920 U	NR	NR	NR	NR	NR	NR	NR
Trichlorofluoromethane	NS	NS	NS	610 U	NR	NR	NR	NR	NR	NR	NR
1,1-Dichloroethene	8,000	150,000	10,000	610 U	NR	NR	NR	NR	NR	NR	NR
Acetone	1,000,000	1,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR
1,1-Dichloroethane	570,000	1,000,000	10,000	1,500 U	NR	NR	NR	NR	NR	NR	NR
2-Butanone(MEK)	1,000,000	1,000,000	50,000	NR	NR	NR	NR	NR	NR	NR	NR
trans-1,2-Dichloroethene	1,000,000	1,000,000	50,000	1,500 U	NR	NR	NR	NR	NR	NR	NR
cis-1,2-Dichloroethene	79,000	1,000,000	1,000	1,500 U	NR	NR	NR	NR	NR	NR	NR
Chloroform	19,000	28,000	1,000	1,500 U	NR	NR	NR	NR	NR	NR	NR
1,2-Dichloroethane	6,000	24,000	1,000	610 U	NR	NR	NR	NR	NR	NR	NR
1,1,1-Trichloroethane	210,000	1,000,000	50,000	1,500 U	NR	NR	NR	NR	NR	NR	NR
CarbonTetrachloride	2,000	4,000	1,000	610 U	NR	NR	NR	NR	NR	NR	NR
Bromodichloromethane	11,000	46,000	1,000	300 U	NR	NR	NR	NR	NR	NR	NR
(1) 1,2-Dichloropropane	10,000	43,000	NS	300 U	NR	NR	NR	NR	NR	NR	NR
cis-1,3-Dichloropropene	4,000	5,000	1,000	1,500 U	NR	NR	NR	NR	NR	NR	NR
4-Methyl-2-pentanone(MIBK)	1,000,000	1,000,000	50,000	NR	NR	NR	NR	NR	NR	NR	NR
Trichloroethene	23,000	54,000	1,000	300 U	NR	NR	NR	NR	NR	NR	NR
Dibromochloromethane	110,000	1,000,000	1,000	1,500 U	NR	NR	NR	NR	NR	NR	NR
1,1,2-Trichloroethane	22,000	420,000	1,000	920 U	NR	NR	NR	NR	NR	NR	NR
Benzene	3,000	13,000	1,000	300 U	NR	NR	NR	NR	NR	NR	NR
(1) trans-1,3-Dichloropropene	4,000	5,000	1,000	1,500 U	NR	NR	NR	NR	NR	NR	NR
2-ChloroethylVinylEther	NS	NS	NS	1,500 U	NR	NR	NR	NR	NR	NR	NR
Bromoform	86,000	370,000	1,000	1,200 U	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	4,000	6,000	1,000	300 U	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-Tetrachloroethane	34,000	70,000	1,000	300 U	NR	NR	NR	NR	NR	NR	NR
Toluene	1,000,000	1,000,000	500,000	1,500 U	NR	NR	NR	NR	NR	NR	NR
Chlorobenzene	37,000	680,000	1,000	370 J	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	1,000,000	1,000,000	100,000	1,800	NR	NR	NR	NR	NR	NR	NR
Xylene(Total)	410,000	1,000,000	67,000	2,900	NR	NR	NR	NR	NR	NR	NR
n-Propanol	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR
Total Confident Conc. VOAs (s)				5,070							
Total Estimated Conc. VOA TICs (s)				141,000							

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

(2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.

Qualifiers:

- U - The compound was not detected at the indicated concentration.
 - J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.
 - B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
 - NS - No standard has been developed by the Department.
 - NR - Not analyzed.

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID	New Jersey Residential	New Jersey Non-Residential	New Jersey Impact to	H-1	H-2_0-6	H-3_18-24	H-4_18-24	H-5_0-6	H-6_0-6	H-7_1.5-2.0	H-8_5-5.5	
Lab Sample Number	Direct Contact	Direct Contact	Ground Water	142578	142579	142580	142581	142582	142583	142584	142585	
Sampling Date	Soil Cleanup	Soil Cleanup	Soil Cleanup	7/8/99	7/8/99	7/8/99	7/8/99	7/8/99	7/8/99	7/8/99	7/8/99	
Matrix	Criteria (ug/kg)	Criteria (ug/kg)	Criteria (ug/kg)	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
Dilution Factor	2500.0	50000.0	2000.0	500.0	500.0	500.0	500.0	50.0	50.0	50.0	50.0	
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	
VOLATILE COMPOUNDS (GC/MS)												
(1)	Chloromethane	520,000	1,000,000	10,000	15,000	U	300,000	U	11,000	U	2,400	U
	Bromomethane	79,000	1,000,000	1,000	15,000	U	300,000	U	11,000	U	2,400	U
	VinylChloride	2,000	7,000	10,000	15,000	U	300,000	U	11,000	U	2,400	U
	Chloeoethane	NS	NS	18,000	300,000	U	11,000	U	2,400	U	NR	NR
	MethyleneChloride	49,000	210,000	1,000	22,000	U	220,000	J	85,000	U	3,600	U
	Trichlorofluoromethane	NS	NS	15,000	300,000	U	11,000	U	2,400	U	NR	NR
	1,1-Dichloroethene	8,000	150,000	10,000	15,000	U	300,000	U	8,100	J	2,400	U
	Acetone	1,000,000	1,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR
	1,1-Dichloroethane	570,000	1,000,000	10,000	19,000	J	500,000	J	140,000	U	6,100	U
	2-Butanone(MEK)	1,000,000	1,000,000	50,000	NR	NR	NR	NR	NR	NR	790	7,800
	trans-1,2-Dichloroethene	1,000,000	1,000,000	50,000	37,000	U	760,000	U	27,000	U	6,100	U
	cis-1,2-Dichloroethene	79,000	1,000,000	1,000	37,000	U	760,000	U	5,100	J	6,100	U
	Chloroform	19,000	28,000	1,000	37,000	U	760,000	U	27,000	U	6,100	U
	1,2-Dichloroethane	6,000	24,000	1,000	15,000	U	300,000	U	11,000	U	2,400	U
	1,1,1-Trichloroethane	210,000	1,000,000	50,000	37,000	U	8,400,000	U	300,000	U	6,100	U
	CarbonTetrachloride	2,000	4,000	1,000	15,000	U	300,000	U	11,000	U	2,400	U
	Bromodichloromethane	11,000	46,000	1,000	7,400	U	150,000	U	5,400	U	1,200	U
	1,2-Dichloropropane	10,000	43,000	NS	7,400	U	150,000	U	5,400	U	1,200	U
	cis-1,3-Dichloropropene	4,000	5,000	1,000	37,000	U	760,000	U	27,000	U	6,100	U
	4-Methyl-2-pentanone(MIBK)	1,000,000	1,000,000	50,000	NR	NR	NR	NR	NR	NR	NR	NR
	Trichloroethene	23,000	54,000	1,000	7,400	U	150,000	U	14,000	U	1,200	U
	Dibromochloromethane	110,000	1,000,000	1,000	37,000	U	760,000	U	27,000	U	6,100	U
	1,1,2-Trichloroethane	22,000	420,000	1,000	22,000	U	460,000	U	16,000	U	3,600	U
	Benzene	3,000	13,000	1,000	7,400	U	150,000	U	5,400	U	1,200	U
	trans-1,3-Dichloropropene	4,000	5,000	1,000	37,000	U	760,000	U	27,000	U	6,100	U
	2-ChloroethylVinylEther	NS	NS	NS	37,000	U	760,000	U	27,000	U	6,100	U
	Bromoform	86,000	370,000	1,000	30,000	U	610,000	U	22,000	U	4,800	U
	Tetrachloroethene	4,000	6,000	1,000	7,400	U	340,000	U	38,000	U	1,200	U
	1,1,2,2-Tetrachloroethane	34,000	70,000	1,000	7,400	U	150,000	U	5,400	U	1,200	U
	Toluene	1,000,000	1,000,000	500,000	55,000	U	3,500,000	U	480,000	J	4,500	J
	Chlorobenzene	37,000	680,000	1,000	37,000	U	760,000	U	27,000	U	6,100	U
	Ethylbenzene	1,000,000	1,000,000	100,000	110,000	U	980,000	U	280,000	U	41,000	U
	Xylene(Total)	410,000	1,000,000	67,000	550,000	U	4,300,000	U	1,300,000	U	220,000	U
	n-Propanol	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR
Total Confident Conc. VOAs (s)				752,000	18,240,000	2,650,200	265,500			3,030	75,600	8,590
Total Estimated Conc. VOA TICs (s)				2,650,000	1,450,000	415,000	300,600			13,240	570,000	13,800

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

(2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.

Qualifiers:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

NS - No standard has been developed by the Department.

NR - Not analyzed.

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID	New Jersey Residential	New Jersey Non-Residential	New Jersey Impact to	H-9_18-24	H-10_0-6	H-11_0-6	H-12_6-12	H-13_6-12	H-14_6-12	H-15_6-12	H-16_6-12	
Lab Sample Number	Direct Contact	Direct Contact	Ground Water	142586	142587	142588	142589	142590	142591	142592	142593	
Sampling Date	Soil Cleanup	Soil Cleanup	Soil Cleanup	7/8/99	7/8/99	7/8/99	7/8/99	7/8/99	7/8/99	7/8/99	7/8/99	
Matrix	Criteria (ug/kg)	Criteria (ug/kg)	Criteria (ug/kg)	SOIL 50.0 ug/Kg	SOIL	SOIL 1000.0 ug/Kg	SOIL 50.0 ug/Kg	SOIL	SOIL	SOIL	SOIL	
Units												
VOLATILE COMPOUNDS (GC/MS)												
(1)	Chromomethane	520,000	1,000,000	10,000	280 U	NR	5,300 U	270 U	NR	NR	NR	260 U
	Bromomethane	79,000	1,000,000	1,000	280 U	NR	5,300 U	270 U	NR	NR	NR	260 U
(1)	VinylChloride	2,000	7,000	10,000	280 U	NR	5,300 U	270 U	NR	NR	NR	260 U
	Chloroethane	NS	NS	NS	970	NR	5,300 U	270 U	NR	NR	NR	260 U
	MethyleneChloride	49,000	210,000	1,000	150 J	NR	28,000 U	410 U	NR	NR	NR	1,000
	Trichlorofluoromethane	NS	NS	NS	280 U	NR	5,300 U	270 U	NR	NR	NR	260 U
	1,1-Dichloroethene	8,000	150,000	10,000	280 U	NR	5,300 U	270 U	NR	NR	NR	260 U
	Acetone	1,000,000	1,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR
	1,1-Dichloroethane	570,000	1,000,000	10,000	700 U	NR	24,000 U	680 U	NR	NR	NR	650 U
	2-Butanone(MEK)	1,000,000	1,000,000	50,000	NR	NR	NR	NR	NR	NR	NR	NR
	trans-1,2-Dichloroethene	1,000,000	1,000,000	50,000	700 U	NR	13,000 U	680 U	NR	NR	NR	650 U
	cis-1,2-Dichloroethene	79,000	1,000,000	1,000	700 U	NR	67,000 U	680 U	NR	NR	NR	460 U
	Chloroform	19,000	28,000	1,000	700 U	NR	13,000 U	680 U	NR	NR	NR	650 U
	1,2-Dichloroethane	6,000	24,000	1,000	280 U	NR	5,300 U	270 U	NR	NR	NR	260 U
	1,1,1-Trichloroethane	210,000	1,000,000	50,000	700 U	NR	180,000 U	680 U	NR	NR	NR	650 U
	CarbonTetrachloride	2,000	4,000	1,000	280 U	NR	5,300 U	270 U	NR	NR	NR	260 U
	Bromodichloromethane	11,000	46,000	1,000	140 U	NR	2,600 U	140 U	NR	NR	NR	130 U
	1,2-Dichloropropane	10,000	43,000	NS	140 U	NR	34,000 U	140 U	NR	NR	NR	130 U
	cis-1,3-Dichloropropene	4,000	5,000	1,000	700 U	NR	13,000 U	680 U	NR	NR	NR	650 U
	4-Methyl-2-pentanone(MIBK)	1,000,000	1,000,000	50,000	NR	NR	NR	NR	NR	NR	NR	NR
	Trichloroethene	23,000	54,000	1,000	140 U	NR	10,000 U	140 U	NR	NR	NR	120 U
(1)	Dibromochloromethane	110,000	1,000,000	1,000	700 U	NR	13,000 U	680 U	NR	NR	NR	650 U
	1,1,2-Trichloroethane	22,000	420,000	1,000	420 U	NR	7,900 U	410 U	NR	NR	NR	390 U
	Benzene	3,000	13,000	1,000	140 U	NR	2,600 U	140 U	NR	NR	NR	130 U
	trans-1,3-Dichloropropene	4,000	5,000	1,000	700 U	NR	13,000 U	680 U	NR	NR	NR	650 U
	2-ChloroethylVinylEther	NS	NS	NS	700 U	NR	13,000 U	680 U	NR	NR	NR	650 U
	Bromoform	86,000	370,000	1,000	560 U	NR	10,000 U	540 U	NR	NR	NR	520 U
	Tetrachloroethene	4,000	6,000	1,000	140 U	NR	180,000 U	140 U	NR	NR	NR	2,600 U
1,1,2-Tetrachloroethane		34,000	70,000	1,000	140 U	NR	2,600 U	140 U	NR	NR	NR	130 U
Toluene		1,000,000	1,000,000	500,000	510 J	NR	320,000 U	680 U	NR	NR	NR	240 U
Chlorobenzene		37,000	680,000	1,000	700 U	NR	13,000 U	680 U	NR	NR	NR	650 U
Ethylbenzene		1,000,000	1,000,000	100,000	1,900	NR	52,000 U	540 U	NR	NR	NR	520 U
Xylene(Total)		410,000	1,000,000	67,000	10,000	NR	300,000 U	680 U	NR	NR	NR	650 U
n-Propanol		NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR
Total Confident Conc. VOAs (s)				13,530		1,195,000	0					5,070
Total Estimated Conc. VOA TICs (s)				22,000		1,622,000	0					1,600

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

(1) Values listed reflect the combined standards for the cis and trans Isomers of 1,3-Dichloropropene.

(2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.

Qualifiers:

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J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.

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NS - No standard has been developed by the Department.

NR - Not analyzed.

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID	New Jersey Residential	New Jersey Non-Residential	New Jersey Impact to	H-17_6-12	H-18_6-12	H-19_6-12	H-19.1	H-21	H-22	H-24	H-25
Lab Sample Number	Direct Contact	Direct Contact	Ground Water	142594	142595	142596	168766	168767	168768	168769	168770
Sampling Date	Soil Cleanup	Soil Cleanup	Soil Cleanup	7/8/99	7/8/99	7/8/99	11/11/99	11/11/99	11/11/99	11/11/99	11/11/99
Matrix	Criteria (ug/kg)	Criteria (ug/kg)	Criteria (ug/kg)	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Dilution Factor				20000.0	50.0	2500.0	50.0	50.0	50.0	50.0	2000.0
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
VOLATILE COMPOUNDS (GC/MS)											
	Chloromethane	520,000	1,000,000	10,000	110,000 U	250 U	13,000 U	240 U	200 U	200 U	220 U
	Bromomethane	79,000	1,000,000	1,000	110,000 U	250 U	13,000 U	240 U	200 U	200 U	220 U
	VinylChloride	2,000	7,000	10,000	110,000 U	250 U	13,000 U	240 U	200 U	200 U	220 U
	Chlooroethane	NS	NS	NS	110,000 U	250 U	13,000 U	240 U	200 U	200 U	220 U
	MethyleneChloride	49,000	210,000	1,000	160,000 U	180 J	310,000	2,100	310 U	300 U	330 U
	Trichlorofluoromethane	NS	NS	NS	110,000 U	250 U	13,000 U	240 U	200 U	200 U	220 U
	1,1-Dichloroethene	8,000	150,000	10,000	110,000 U	250 U	13,000 U	240 U	200 U	200 U	220 U
	Acetone	1,000,000	1,000,000	100,000	NR	NR	NR	NR	NR	NR	NR
	1,1-Dichloroethane	570,000	1,000,000	10,000	280,000 U	630 U	19,000 J	270 J	510 U	490 U	550 U
	2-Butanone(MEK)	1,000,000	1,000,000	50,000	NR	NR	NR	NR	NR	NR	NR
	trans-1,2-Dichloroethene	1,000,000	1,000,000	50,000	280,000 U	630 U	32,000 U	600 U	510 U	490 U	550 U
	cis-1,2-Dichloroethene	79,000	1,000,000	1,000	280,000 U	630 U	280,000	1,600	510 U	490 U	550 U
	Chloroform	19,000	28,000	1,000	280,000 U	630 U	32,000 U	600 U	510 U	490 U	550 U
	1,2-Dichloroethane	6,000	24,000	1,000	110,000 U	250 U	13,000 U	240 U	200 U	200 U	220 U
	1,1,1-Trichloroethane	210,000	1,000,000	50,000	280,000 U	630 U	76,000	970	510 U	490 U	550 U
	CarbonTetrachloride	2,000	4,000	1,000	110,000 U	250 U	13,000 U	240 U	200 U	200 U	220 U
	Bromodichloromethane	11,000	46,000	1,000	55,000 U	120 U	6,500 U	120 U	100 U	98 U	110 U
	1,2-Dichloropropane	10,000	43,000	NS	55,000 U	120 U	86,000	450	100 U	98 U	110 U
(1)	cis-1,3-Dichloropropene	4,000	5,000	1,000	280,000 U	630 U	32,000 U	600 U	510 U	490 U	550 U
	4-Methyl-2-pentanone(MIBK)	1,000,000	1,000,000	50,000	NR	NR	NR	NR	NR	NR	NR
	Trichloroethene	23,000	54,000	1,000	55,000 U	120 U	21,000	150	100 U	98 U	110 U
	Dibromochloromethane	110,000	1,000,000	1,000	280,000 U	630 U	32,000 U	600 U	510 U	490 U	550 U
	1,1,2-Trichloroethane	22,000	420,000	1,000	160,000 U	380 U	19,000 U	360 U	310 U	300 U	330 U
	Benzene	3,000	13,000	1,000	55,000 U	120 U	6,500 U	120 U	100 U	98 U	110 U
	trans-1,3-Dichloropropene	4,000	5,000	1,000	280,000 U	630 U	32,000 U	600 U	510 U	490 U	550 U
	2-ChloroethylVinylEther	NS	NS	NS	280,000 U	630 U	32,000 U	600 U	510 U	490 U	550 U
	Bromoform	86,000	370,000	1,000	220,000 U	500 U	26,000 U	480 U	410 U	390 U	440 U
	Tetrachloroethene	4,000	6,000	1,000	55,000 U	120 U	220,000	840	100 U	600	110 U
	1,1,2,2-Tetrachloroethane	34,000	70,000	1,000	55,000 U	120 U	6,500 U	120 U	100 U	98 U	110 U
	Toluene	1,000,000	1,000,000	500,000	280,000 U	630 U	700,000	2,300	510 U	490 U	550 U
	Chlorobenzene	37,000	680,000	1,000	280,000 U	630 U	32,000 U	1,100	510 U	490 U	550 U
	Ethylbenzene	1,000,000	1,000,000	100,000	220,000 U	500 U	20,000 J	370 J	410 U	390 U	440 U
	Xylene(Total)	410,000	1,000,000	67,000	280,000 U	630 U	210,000	1,900	510 U	490 U	550 U
	n-Propanol	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR
Total Confident Conc. VOA(s)				0	180	1,942,000	12,050	0	600	0	2,958,100
Total Estimated Conc. VOA TICs(s)				11,200,000	0	2,934,000	30,980	690	0	0	1,301,000

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

(2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.

Qualifiers:

U - The compound was not detected at the indicated concentration.

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The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

NS - No standard has been developed by the Department.

NR - Not analyzed.

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID	New Jersey Residential	New Jersey Non-Residential	New Jersey Impact to	H-26	H-27_1	H-27_2	H-28_1	H-28_2	H-29	H-30	H-31
Lab Sample Number	Direct Contact	Direct Contact	Ground Water	168771	168772	168773	168774	168775	168776	168777	168778
Sampling Date	Soil Cleanup	Soil Cleanup	Soil Cleanup	11/11/99	11/11/99	11/11/99	11/11/99	11/11/99	11/11/99	11/11/99	11/11/99
Matrix	Criteria (ug/kg)	Criteria (ug/kg)	Criteria (ug/kg)	SOIL							
Dilution Factor				50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
VOLATILE COMPOUNDS (GC/MS)											
	Chloromethane	520,000	1,000,000	10,000	220 U	200 U	NR	220 U	190 U	NR	NR
	Bromomethane	79,000	1,000,000	1,000	220 U	200 U	NR	220 U	190 U	NR	180 U
	VinylChloride	2,000	7,000	10,000	220 U	200 U	NR	220 U	190 U	NR	180 U
	Chloroethane	NS	NS	NS	220 U	200 U	NR	220 U	190 U	NR	180 U
	MethyleneChloride	49,000	210,000	1,000	320 U	300 U	NR	330 U	290 U	NR	180 U
	Trichlorofluoromethane	NS	NS	NS	220 U	200 U	NR	220 U	190 U	NR	280 U
	1,1-Dichloroethene	8,000	150,000	10,000	220 U	200 U	NR	220 U	190 U	NR	180 U
	Acetone	1,000,000	1,000,000	100,000	NR						
	1,1-Dichloroethane	570,000	1,000,000	10,000	540 U	500 U	NR	550 U	480 U	NR	NR
	2-Butanone(MEK)	1,000,000	1,000,000	50,000	NR	NR	NR	NR	NR	NR	460 U
	trans-1,2-Dichloroethene	1,000,000	1,000,000	50,000	540 U	500 U	NR	550 U	480 U	NR	NR
	cis-1,2-Dichloroethene	79,000	1,000,000	1,000	540 U	500 U	NR	550 U	480 U	NR	460 U
	Chloroform	19,000	28,000	1,000	540 U	500 U	NR	550 U	480 U	NR	460 U
	1,2-Dichloroethane	6,000	24,000	1,000	220 U	200 U	NR	220 U	190 U	NR	460 U
	1,1,1-Trichloroethane	210,000	1,000,000	50,000	60 J	500 U	NR	140 J	180 J	NR	180 U
	CarbonTetrachloride	2,000	4,000	1,000	220 U	200 U	NR	220 U	190 U	NR	180 U
	Bromodichloromethane	11,000	46,000	1,000	110 U	100 U	NR	110 U	96 U	NR	92 U
(1)	1,2-Dichloropropane	10,000	43,000	NS	110 U	100 U	NR	110 U	96 U	NR	92 U
	cis-1,3-Dichloropropene	4,000	5,000	1,000	540 U	500 U	NR	550 U	480 U	NR	460 U
	4-Methyl-2-pentanone(MIBK)	1,000,000	1,000,000	50,000	NR						
	Trichloroethene	23,000	54,000	1,000	110 U	100 U	NR	110 U	96 U	NR	92 U
	Dibromochloromethane	110,000	1,000,000	1,000	540 U	500 U	NR	550 U	480 U	NR	460 U
	1,1,2-Trichloroethane	22,000	420,000	1,000	320 U	300 U	NR	330 U	290 U	NR	280 U
	Benzene	3,000	13,000	1,000	110 U	100 U	NR	110 U	96 U	NR	92 U
(1)	trans-1,3-Dichloropropene	4,000	5,000	1,000	540 U	500 U	NR	550 U	480 U	NR	460 U
	2-ChloroethylVinylEther	NS	NS	NS	540 U	500 U	NR	550 U	480 U	NR	460 U
	Bromoform	86,000	370,000	1,000	430 U	400 U	NR	440 U	380 U	NR	370 U
	Tetrachloroethene	4,000	6,000	1,000	110 U	100 U	NR	110 U	96 U	NR	92 U
	1,1,2,2-Tetrachloroethane	34,000	70,000	1,000	110 U	100 U	NR	110 U	96 U	NR	92 U
	Toluene	1,000,000	1,000,000	500,000	54 J	500 U	NR	310 J	390 J	NR	460 U
	Chlorobenzene	37,000	680,000	1,000	540 U	500 U	NR	550 U	480 U	NR	460 U
	Ethylbenzene	1,000,000	1,000,000	100,000	430 U	400 U	NR	140 J	120 J	NR	370 U
	Xylene(Total)	410,000	1,000,000	67,000	540 U	500 U	NR	610	1,600	NR	460 U
	n-Propanol	NS	NS	NS	NR						
Total Confident Conc. VOAs (s)				114	0			1,200	2,290		0
Total Estimated Conc. VOA TICs (s)				720	42,200			0	0		0

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

(2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.

Qualifiers:

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- NS - No standard has been developed by the Department.
- NR - Not analyzed.

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (ug/kg)	H-32 168779 11/11/99 SOIL 50.0 ug/Kg	H-33 168780 11/11/99 SOIL 50.0 ug/Kg	H-34 168781 11/11/99 SOIL 2000.0 ug/Kg	H-35 168782 11/11/99 SOIL 50.0 ug/Kg	H-36 179234 1/13/00 SOIL	H-37 179235 1/13/00 SOIL	H-38 179236 1/13/00 SOIL	H-39 179237 1/13/00 SOIL	
Sampling Date												
Matrix												
Dilution Factor												
Units												
VOLATILE COMPOUNDS (GC/MS)												
(1)	Chloromethane	520,000	1,000,000	10,000	200 U	210 U	6,000 U	220 U	NR	NR	NR	NR
	Bromomethane	79,000	1,000,000	1,000	200 U	210 U	6,000 U	220 U	NR	NR	NR	NR
	VinylChloride	2,000	7,000	10,000	200 U	210 U	6,000 U	220 U	NR	NR	NR	NR
	Chloroethane	NS	NS	NS	200 U	210 U	6,000 U	220 U	NR	NR	NR	NR
	MethyleneChloride	49,000	210,000	1,000	210 J	320 U	79,000 U	330 U	NR	NR	NR	NR
	Trichlorofluoromethane	NS	NS	NS	200 U	210 U	6,000 U	220 U	NR	NR	NR	NR
	1,1-Dichloroethene	8,000	150,000	10,000	200 U	210 U	6,000 U	220 U	NR	NR	NR	NR
	Acetone	1,000,000	1,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR
	1,1-Dichloroethane	570,000	1,000,000	10,000	54 J	530 U	22,000 U	550 U	NR	NR	NR	NR
	2-Butanone(MEK)	1,000,000	1,000,000	50,000	NR	NR	NR	NR	NR	NR	NR	NR
	trans-1,2-Dichloroethene	1,000,000	1,000,000	50,000	510 U	530 U	15,000 U	550 U	NR	NR	NR	NR
	cis-1,2-Dichloroethene	79,000	1,000,000	1,000	510 U	530 U	15,000 U	550 U	NR	NR	NR	NR
	Chloroform	19,000	28,000	1,000	510 U	530 U	15,000 U	550 U	NR	NR	NR	NR
	1,2-Dichloroethane	6,000	24,000	1,000	200 U	210 U	6,000 U	220 U	NR	NR	NR	NR
	1,1,1-Trichloroethane	210,000	1,000,000	50,000	160 J	530 U	31,000 U	96 J	NR	NR	NR	NR
	CarbonTetrachloride	2,000	4,000	1,000	200 U	210 U	6,000 U	220 U	NR	NR	NR	NR
	Bromodichloromethane	11,000	46,000	1,000	100 U	110 U	3,000 U	110 U	NR	NR	NR	NR
	1,2-Dichloropropane	10,000	43,000	NS	130 U	110 U	3,000 U	110 U	NR	NR	NR	NR
	cis-1,3-Dichloropropene	4,000	5,000	1,000	510 U	530 U	15,000 U	550 U	NR	NR	NR	NR
	4-Methyl-2-pentanone(MIBK)	1,000,000	1,000,000	50,000	NR	NR	NR	NR	NR	NR	NR	NR
	Trichloroethene	23,000	54,000	1,000	100 U	110 U	3,000 U	110 U	NR	NR	NR	NR
	Dibromochloromethane	110,000	1,000,000	1,000	510 U	530 U	15,000 U	550 U	NR	NR	NR	NR
(1)	1,1,2-Trichloroethane	22,000	420,000	1,000	300 U	320 U	9,100 U	330 U	NR	NR	NR	NR
	Benzene	3,000	13,000	1,000	100 U	110 U	3,000 U	110 U	NR	NR	NR	NR
	trans-1,3-Dichloropropene	4,000	5,000	1,000	510 U	530 U	15,000 U	550 U	NR	NR	NR	NR
	2-ChloroethylVinylEther	NS	NS	NS	510 U	530 U	15,000 U	550 U	NR	NR	NR	NR
	Bromoform	86,000	370,000	1,000	400 U	430 U	12,000 U	440 U	NR	NR	NR	NR
	Tetrachloroethene	4,000	6,000	1,000	100 U	110 U	3,000 U	110 U	NR	NR	NR	NR
	1,1,2-Tetrachloroethane	34,000	70,000	1,000	100 U	110 U	3,000 U	110 U	NR	NR	NR	NR
	Toluene	1,000,000	1,000,000	500,000	60 J	530 U	260,000 U	110 J	NR	NR	NR	NR
Total Confident Conc. VOA(s)	Chlorobenzene	37,000	680,000	1,000	510 U	530 U	15,000 U	550 U	NR	NR	NR	NR
	Ethylbenzene	1,000,000	1,000,000	100,000	400 U	430 U	46,000 U	860	NR	NR	NR	NR
	Xylene(Total)	410,000	1,000,000	67,000	510 U	530 U	220,000 U	13,000	NR	NR	NR	NR
Total Estimated Conc. VOA TICs (s)												
				614	0	658,000	14,066					
				1,580	2,330	179,000	18,320					

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

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TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Impact to Ground Water Criteria (ug/kg)	H-40 1/13/00 SOIL	B-1_0-4 01/15/02 SOLID ug/Kg	B-2_0-4 01/15/02 SOLID ug/Kg	B-3_0-4 01/15/02 SOLID ug/Kg	B-1_4-8 01/15/02 SOLID ug/Kg	B-4_24-26 01/15/02 SOLID ug/Kg	B-4_33-35 327173 SOLID ug/Kg
VOLATILE COMPOUNDS (GC/MS)										
Chloromethane	520,000	1,000,000	10,000	NR	880 U	750 U	830 U	710 U	920 U	580 U
Bromomethane	79,000	1,000,000	1,000	NR	880 U	750 U	830 U	710 U	920 U	580 U
VinylChloride	2,000	7,000	10,000	NR	880 U	750 U	830 U	710 U	920 U	580 U
Chloroethane	NS	NS	NS	NR	880 U	750 U	830 U	710 U	920 U	580 U
MethyleneChloride	49,000	210,000	1,000	NR	520 U	450 U	500 U	420 U	550 U	1,400
Trichlorofluoromethane	NS	NS	NS	NR	880 U	750 U	830 U	710 U	920 U	580 U
1,1-Dichloroethene	8,000	150,000	10,000	NR	350 U	300 U	330 U	280 U	370 U	230 U
Acetone	1,000,000	1,000,000	100,000	NR	NR	NR	NR	NR	NR	NR
1,1-Dichloroethane	570,000	1,000,000	10,000	NR	880 U	750 U	830 U	710 U	920 U	580 U
2-Butanone(MEK)	1,000,000	1,000,000	50,000	NR	NR	NR	NR	NR	NR	NR
trans-1,2-Dichloroethene	1,000,000	1,000,000	50,000	NR	880 U	750 U	830 U	710 U	920 U	580 U
cis-1,2-Dichloroethene	79,000	1,000,000	1,000	NR	880 U	750 U	830 U	710 U	920 U	580 U
Chloroform	19,000	28,000	1,000	NR	880 U	750 U	830 U	710 U	920 U	260 J
1,2-Dichloroethane	6,000	24,000	1,000	NR	880 U	750 U	830 U	710 U	920 U	580 U
1,1,1-Trichloroethane	210,000	1,000,000	50,000	NR	350 U	300 U	330 U	280 U	370 U	230 U
CarbonTetrachloride	2,000	4,000	1,000	NR	880 U	750 U	830 U	710 U	920 U	580 U
Bromodichloromethane	11,000	46,000	1,000	NR	180 U	150 U	170 U	140 U	180 U	120 U
(1) cis-1,3-Dichloropropene	10,000	43,000	NS	NR	180 U	150 U	170 U	140 U	180 U	120 U
4-Methyl-2-pentanone(MIBK)	4,000	5,000	1,000	NR	880 U	750 U	830 U	710 U	920 U	580 U
Trichloroethene	23,000	54,000	1,000	NR	180 U	150 U	170 U	140 U	180 U	120 U
Dibromochloromethane	110,000	1,000,000	1,000	NR	880 U	750 U	830 U	710 U	920 U	580 U
1,1,2-Trichloroethane	22,000	420,000	1,000	NR	520 U	450 U	500 U	420 U	550 U	350 U
Benzene	3,000	13,000	1,000	NR	180 U	150 U	170 U	140 U	180 U	120 U
(1) trans-1,3-Dichloropropene	4,000	5,000	1,000	NR	880 U	750 U	830 U	710 U	920 U	580 U
2-ChloroethylVinylEther	NS	NS	NS	NR	880 U	750 U	830 U	710 U	920 U	580 U
Bromoform	86,000	370,000	1,000	NR	700 U	600 U	660 U	560 U	730 U	470 U
Tetrachloroethene	4,000	6,000	1,000	NR	180 U	150 U	170 U	140 U	180 U	260
1,1,2,2-Tetrachloroethane	34,000	70,000	1,000	NR	180 U	150 U	170 U	140 U	180 U	120 U
Toluene	1,000,000	1,000,000	500,000	NR	880 U	750 U	830 U	710 U	920 U	100 J
Chlorobenzene	37,000	680,000	1,000	NR	880 U	750 U	830 U	710 U	920 U	580 U
Ethylbenzene	1,000,000	1,000,000	100,000	NR	700 U	600 U	660 U	560 U	730 U	470 U
Xylene(Total)	410,000	1,000,000	67,000	NR	400 J	750 U	830 U	6,100	920 U	580 U
n-Propanol	NS	NS	NS	NR	8800 U	75,000 U	83,000 U	71,000 U	92,000 U	58,000 U
Total Confident Conc. VOAs (s)					0	0	0	8,300	0	1,660
Total Estimated Conc. VOA TICs (s)					0	0	0	80,900	0	1,400

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

(2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.

Qualifiers:

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J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.

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NS - No standard has been developed by the Department.

NIR - Not analyzed.

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Impact to Ground Water Criteria (ug/kg)	#1_UST_AREA 2226-001 5/4/98 SOIL	#2_LOADING_BAY 2226-002 5/4/98 SOIL	#3_LOADING_BAY 2226-003 5/4/98 SOIL	#4_LOADING_BAY 2226-004 5/4/98 SOIL	#6_DISCHARGE_AREA 2226-006 5/4/98 SOIL	#7_DISCHARGE_AREA 2226-007 5/4/98 SOIL	#8_TRUCK_PAD 2226-008 5/4/98 SOIL	
SEMIVOLATILE COMPOUNDS (GC/MS)											
N-Nitrosodimethylamine	NS	NS	NS	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
bis(2-Chloroethyl)ether	660	3,000	10,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
1,3-Dichlorobenzene	5,100,000	10,000,000	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
1,4-Dichlorobenzene	570,000	10,000,000	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
1,2-Dichlorobenzene	5,100,000	10,000,000	50,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
bis(2-chloroisopropyl)ether	2,300,000	10,000,000	10,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
N-Nitroso-di-n-propylamine	660	660	10,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Hexachloroethane	6,000	100,000	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Nitrobenzene	28,000	520,000	10,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Isophorone	1,100,000	10,000,000	50,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
bis(2-Chloroethoxy)methane	NS	NS	NS	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
1,2,4-Trichlorobenzene	68,000	1,200,000	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Naphthalene	230,000	4,200,000	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Hexachlorobutadiene	1,000	21,000	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Hexachlorocyclopentadiene	400,000	7,300,000	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
2-Chloronaphthalene	NS	NS	NS	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Dimethylphthalate	10,000,000	10,000,000	50,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Acenaphthylene	NS	NS	NS	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
(1) 2,6-Dinitrotoluene	1,000	4,000	10,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
(1) Acenaphthene	3,400,000	10,000,000	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
2,4-Dinitrotoluene	1,000	4,000	10,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Diethylphthalate	10,000,000	10,000,000	50,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
4-Chlorophenyl-phenylether	NS	NS	NS	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Fluorene	2,300,000	10,000,000	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
N-Nitrosodiphenylamine	140,000	600,000	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
4-Bromophenyl-phenylether	NS	NS	NS	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Hexachlorobenzene	660	2,000	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Phenanthrene	NS	NS	NS	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Anthracene	10,000,000	10,000,000	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Din-butylphthalate	5,700,000	10,000,000	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Fluoranthene	2,300,000	10,000,000	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Pyrene	1,700,000	10,000,000	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Benzidine	NS	NS	NS	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Butylbenzylphthalate	1,100,000	10,000,000	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
3,3'-Dichlorobenzidine	2,000	6,000	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Benz(a)anthracene	900	4,000	500,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
Chrysene	9,000	40,000	500,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	115 U
bis(2-Ethylhexyl)phthalate	49,000	210,000	100,000	NR	73.9 J	115 U	115 U	108 U	167	75 J	
Din-octylphthalate	1,100,000	10,000,000	100,000	NR	109 U	115 U	115 U	108 U	110 J	115 U	
Benz(b)fluoranthene	900	4,000	50,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	
Benz(k)fluoranthene	900	4,000	500,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	
Benz(a)pyrene	660	660	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	
Indeno(1,2,3-cd)pyrene	900	4,000	500,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	
Dibenz(a,h)anthracene	660	660	100,000	NR	109 U	115 U	115 U	108 U	118 U	115 U	
Benz(g,h,i)perylene	NS	NS	NS	NR	109 U	115 U	115 U	108 U	118 U	115 U	
Total Confident Conc. BNAs (s)					73.9	0	0	0	277	75	
Total Estimated Conc. BNA TICs (s)					1214	4280	2768	919	4819	0	

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

- (1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.
 (2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.

Qualifiers:

- U - The compound was not detected at the indicated concentration.
- J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero.
- The concentration given is an approximate value.
- B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
- NS - No standard has been developed by the Department.
- NR - Not analyzed.

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Impact to Ground Water Criteria (ug/kg)	#9_MIXING_AREA 2226-009 5/4/98 SOIL 1 ug/Kg	#10_MIXING_AREA 2226-010 5/4/98 SOIL 1 ug/Kg	#11_MIXING_AREA 2226-015 5/4/98 SOIL 1 ug/Kg	#12_RR_CAR 2226-011 5/4/98 SOIL 1 ug/Kg	#13_DISCHARGE_AREA 2226-012 5/4/98 SOIL 1 ug/Kg	#14_TRUCK_PAD 2226-013 5/4/98 SOIL 1 ug/Kg	PE-1_6.2-6.7 142569 7/8/99 SOIL	
SEMIVOLATILE COMPOUNDS (GC/MS)											
N-Nitrosodimethylamine	NS	NS	NS	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
bis(2-Chloroethyl)ether	660	3,000	10,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
1,3-Dichlorobenzene	5,100,000	10,000,000	100,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
1,4-Dichlorobenzene	570,000	10,000,000	100,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
1,2-Dichlorobenzene	5,100,000	10,000,000	50,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
bis(2-chloroisopropyl)ether	2,300,000	10,000,000	10,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
N-Nitroso-di-n-propylamine	660	660	10,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Hexachloroethane	6,000	100,000	100,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Nitrobenzene	28,000	520,000	10,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Iophorone	1,100,000	10,000,000	50,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
bis(2-Chloroethoxy)methane	NS	NS	NS	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
1,2,4-Trichlorobenzene	68,000	1,200,000	100,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Naphthalene	230,000	4,200,000	100,000	89.3 J	537	118 U	129 U	142 U	123 U	123 U	NR
Hexachlorobutadiene	1,000	21,000	100,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Hexachlorocyclopentadiene	400,000	7,300,000	100,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
2-Chloronaphthalene	NS	NS	NS	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Dimethylphthalate	10,000,000	10,000,000	50,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Acenaphthylene	NS	NS	NS	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
(1) 2,6-Dinitrotoluene	1,000	4,000	10,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
(1) Acenaphthene	3,400,000	10,000,000	100,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
2,4-Dinitrotoluene	1,000	4,000	10,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Diethylphthalate	10,000,000	10,000,000	50,000	112 U	5130	118 U	129 U	102 J	123 U	123 U	NR
4-Chlorophenyl-phenylether	NS	NS	NS	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Fluorene	2,300,000	10,000,000	100,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
N-Nitrosodiphenylamine	140,000	600,000	100,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
4-Bromophenyl-phenylether	NS	NS	NS	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Hexachlorobenzene	660	2,000	100,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Phenanthrene	NS	NS	NS	112 U	138	118 U	129 U	142 U	123 U	123 U	NR
Anthracene	10,000,000	10,000,000	100,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Di-n-butylphthalate	5,700,000	10,000,000	100,000	112 U	19500	118 U	129 U	118 J	123 U	123 U	NR
Fluoranthene	2,300,000	10,000,000	100,000	79 J	208	118 U	129 U	142 U	123 U	123 U	NR
Pyrene	1,700,000	10,000,000	100,000	72.7 J	158	118 U	129 U	142 U	123 U	123 U	NR
Benzidine	NS	NS	NS	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Butylbenzylphthalate	1,100,000	10,000,000	100,000	117	25900	118 U	129 U	142 U	123 U	123 U	NR
3,3'-Dichlorobenzidine	2,000	6,000	100,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Benzo(a)anthracene	900	4,000	500,000	112 U	72.4 J	118 U	129 U	142 U	123 U	123 U	NR
Chrysene	9,000	40,000	500,000	112 U	126	118 U	129 U	142 U	123 U	123 U	NR
bis(2-Ethylhexyl)phthalate	49,000	210,000	100,000	51100	1310000	537	442	3230	123 U	123 U	NR
Di-n-octylphthalate	1,100,000	10,000,000	100,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Benzo(b)fluoranthene	900	4,000	50,000	112 U	87 J	118 U	129 U	142 U	123 U	123 U	NR
Benzo(k)fluoranthene	900	4,000	500,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Benzo(a)pyrene	660	660	100,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Indeno(1,2,3-cd)pyrene	900	4,000	500,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Dibenz(a,h)anthracene	660	660	100,000	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Benzo(g,h,i)perylene	NS	NS	NS	112 U	107 U	118 U	129 U	142 U	123 U	123 U	NR
Total Confident Conc. BNAs (s)				51458	1361769.4	537	442	3450	0		
Total Estimated Conc. BNA TICs (s)				66560	74390	1861	2204	43290	5589		

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

(2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.

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TABLE 6
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HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (ug/kg)	PE-2_6.2-6.7 142570 7/8/99 SOIL	PE-3_5.2-5.7 142571 7/8/99 SOIL	PE-4_6.2-6.7 142572 7/8/99 SOIL	PE-5_5.5-6.0 142573 7/8/99 SOIL	PE-6_6.2-6.7 142574 7/8/99 SOIL	SP-1 142575 7/8/99 SOIL	SP-2 142576 7/8/99 SOIL	SP-3 142577 7/8/99 SOIL	
SEMIVOLATILE COMPOUNDS (GC/MS)												
N-Nitrosodimethylamine	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
bis(2-Chloroethyl)ether	660	3,000	10,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,3-Dichlorobenzene	5,100,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,4-Dichlorobenzene	570,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dichlorobenzene	5,100,000	10,000,000	50,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
bis(2-chloroisopropyl)ether	2,300,000	10,000,000	10,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
N-Nitroso-di-n-propylamine	660	660	10,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Hexachloroethane	6,000	100,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Nitrobenzene	28,000	520,000	10,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Isophorone	1,100,000	10,000,000	50,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
bis(2-Chloroethoxy)methane	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2,4-Trichlorobenzene	68,000	1,200,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Naphthalene	230,000	4,200,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorobutadiene	1,000	21,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclopentadiene	400,000	7,300,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
2-Chloronaphthalene	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dimethylphthalate	10,000,000	10,000,000	50,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Acenaphthylene	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
(1) 2,6-Dinitrotoluene	1,000	4,000	10,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Acenaphthene	3,400,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
(1) 2,4-Dinitrotoluene	1,000	4,000	10,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Diethylphthalate	10,000,000	10,000,000	50,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-Chlorophenyl-phenylether	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluorene	2,300,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
N-Nitrosodiphenylamine	140,000	600,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-Bromophenyl-phenylether	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorobenzene	660	2,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phenanthrene	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Anthracene	10,000,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Di-n-butylphthalate	5,700,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluoranthene	2,300,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pyrene	1,700,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzidine	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Butylbenzylphthalate	1,100,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
3,3'-Dichlorobenzidine	2,000	6,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benz(a)anthracene	900	4,000	500,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chrysene	9,000	40,000	500,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
bis(2-Ethylhexyl)phthalate	49,000	210,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Di-n-octylphthalate	1,100,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benz(b)fluoranthene	900	4,000	50,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benz(k)fluoranthene	900	4,000	500,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benz(a)pyrene	660	660	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Indeno(1,2,3-cd)pyrene	900	4,000	500,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibenz(a,h)anthracene	660	660	100,000	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benz(g,h,i)perylene	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Total Confident Conc. BNAs (s)												
Total Estimated Conc. BNA TICs (s)												

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

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SEMIVOLATILE COMPOUNDS (GC/MS)											
	NS	NS	NS	NR	20,000 U	NR	NR	3,800 U	NR	NR	NR
	bis(2-Chloroethyl)ether 660	3,000	10,000	NR	2,000 U	NR	NR	380 U	NR	NR	NR
	1,3-Dichlorobenzene 5,100,000	10,000,000	100,000	NR	20,000 U	NR	NR	3,800 U	NR	NR	NR
	1,4-Dichlorobenzene 570,000	10,000,000	100,000	NR	20,000 U	NR	NR	3,800 U	NR	NR	NR
	1,2-Dichlorobenzene 5,100,000	10,000,000	50,000	NR	20,000 U	NR	NR	3,800 U	NR	NR	NR
	bis(2-chloroisopropyl)ether 2,300,000	10,000,000	10,000	NR	20,000 U	NR	NR	3,800 U	NR	NR	NR
	N-Nitroso-di-n-propylamine 660	660	10,000	NR	2,000 U	NR	NR	380 U	NR	NR	NR
	Hexachloroethane 6,000	100,000	100,000	NR	2,000 U	NR	NR	380 U	NR	NR	NR
	Nitrobenzene 28,000	520,000	10,000	NR	2,000 U	NR	NR	380 U	NR	NR	NR
	Isophorone 1,100,000	10,000,000	50,000	NR	1,800 J	NR	NR	3,800 U	NR	NR	NR
	bis(2-Chloroethoxy)methane NS	NS	NS	NR	20,000 U	NR	NR	3,800 U	NR	NR	NR
	1,2,4-Trichlorobenzene 68,000	1,200,000	100,000	NR	2,000 U	NR	NR	3,800 U	NR	NR	NR
	Naphthalene 230,000	4,200,000	100,000	NR	16,000 J	NR	NR	1,500 J	NR	NR	NR
	Hexachlorobutadiene 1,000	21,000	100,000	NR	4,100 U	NR	NR	770 U	NR	NR	NR
	Hexachlorocyclopentadiene 400,000	7,300,000	100,000	NR	20,000 U	NR	NR	3,800 U	NR	NR	NR
	2-Chloronaphthalene NS	NS	NS	NR	420 J	NR	NR	3,800 U	NR	NR	NR
(1)	Dimethylphthalate 10,000,000	10,000,000	50,000	NR	20,000 U	NR	NR	3,800 U	NR	NR	NR
	Acenaphthylene NS	NS	NS	NR	20,000 U	NR	NR	3,800 U	NR	NR	NR
(1)	2,6-Dinitrotoluene 1,000	4,000	10,000	NR	4,100 U	NR	NR	770 U	NR	NR	NR
	Acenaphthene 3,400,000	10,000,000	100,000	NR	20,000 U	NR	NR	330 J	NR	NR	NR
	2,4-Dinitrotoluene 1,000	4,000	10,000	NR	4,100 U	NR	NR	770 U	NR	NR	NR
	Diethylphthalate 10,000,000	10,000,000	50,000	NR	28,000 U	NR	NR	840 J	NR	NR	NR
	4-Chlorophenyl-phenylether NS	NS	NS	NR	20,000 U	NR	NR	3,800 U	NR	NR	NR
	Fluorene 2,300,000	10,000,000	100,000	NR	20,000 U	NR	NR	300 J	NR	NR	NR
	N-Nitrosodiphenylamine 140,000	600,000	100,000	NR	20,000 U	NR	NR	3,800 U	NR	NR	NR
	4-Bromophenyl-phenylether NS	NS	NS	NR	20,000 U	NR	NR	3,800 U	NR	NR	NR
	Hexachlorobenzene 660	2,000	100,000	NR	2,000 U	NR	NR	380 U	NR	NR	NR
	Phenanthrene NS	NS	NS	NR	20,000 U	NR	NR	890 J	NR	NR	NR
	Anthracene 10,000,000	10,000,000	100,000	NR	20,000 U	NR	NR	560 J	NR	NR	NR
	Di-n-butylphthalate 5,700,000	10,000,000	100,000	NR	20,000 U	NR	NR	3,800 U	NR	NR	NR
	Fluoranthenne 2,300,000	10,000,000	100,000	NR	20,000 U	NR	NR	1,400 J	NR	NR	NR
	Pyrene 1,700,000	10,000,000	100,000	NR	20,000 U	NR	NR	1,000 J	NR	NR	NR
	Benzidine NS	NS	NS	NR	82,000 U	NR	NR	15,000 U	NR	NR	NR
	Butylbenzylphthalate 1,100,000	10,000,000	100,000	NR	20,000 U	NR	NR	3,800 U	NR	NR	NR
	3,3'-Dichlorobenzidine 2,000	6,000	100,000	NR	41,000 U	NR	NR	7,700 U	NR	NR	NR
	Benz(a)anthracene 900	4,000	500,000	NR	2,000 U	NR	NR	240 J	NR	NR	NR
	Chrysene 9,000	40,000	500,000	NR	20,000 U	NR	NR	400 J	NR	NR	NR
	bis(2-Ethylhexyl)phthalate 49,000	210,000	100,000	NR	460,000 U	NR	NR	36,000 U	NR	NR	NR
	Di-n-octylphthalate 1,100,000	10,000,000	100,000	NR	20,000 U	NR	NR	3,800 U	NR	NR	NR
	Benz(b)fluoranthene 900	4,000	50,000	NR	2,000 U	NR	NR	240 J	NR	NR	NR
	Benz(k)fluoranthene 900	4,000	500,000	NR	2,000 U	NR	NR	79 J	NR	NR	NR
	Benz(a)pyrene 660	660	100,000	NR	2,000 U	NR	NR	380 U	NR	NR	NR
	Indeno(1,2,3-cd)pyrene 900	4,000	500,000	NR	2,000 U	NR	NR	380 U	NR	NR	NR
	Dibenz(a,h)anthracene 660	660	100,000	NR	2,000 U	NR	NR	380 U	NR	NR	NR
	Benz(g,h,i)perylene NS	NS	NS	NR	20,000 U	NR	NR	3,800 U	NR	NR	NR
Total Confident Conc. BNAs (s)					506,220			43,779			
Total Estimated Conc. BNA TICs (s)					7,220,000			657,000			

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

(2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.

Qualifiers:

- U - The compound was not detected at the indicated concentration.
- J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero.
- The concentration given is an approximate value.
- B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
- NS - No standard has been developed by the Department.
- NR - Not analyzed.

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (ug/kg)	H-9_18-24 142586 7/8/99 10.0 ug/Kg	H-10_0-6 142587 7/8/99 5.0 ug/Kg	H-11_0-6 142588 7/8/99 50.0 ug/Kg	H-12_6-12 142589 7/8/99 SOIL NR	H-13_6-12 142590 7/8/99 SOIL NR	H-14_6-12 142591 7/8/99 SOIL NR	H-15_6-12 142592 7/8/99 SOIL NR	H-16_6-12 142593 7/8/99 SOIL NR	
SEMIVOLATILE COMPOUNDS (GC/MS)												
N-Nitrosodimethylamine	NS	NS	NS	3,900 U	1,800 U	19,000 U	NR	710 U	720 U	9,100 U	NR	
bis(2-Chloroethyl)ether	660	3,000	10,000	390 U	180 U	1,900 U	NR	71 U	72 U	910 U	NR	
1,3-Dichlorobenzene	5,100,000	10,000,000	100,000	3,900 U	1,800 U	19,000 U	NR	710 U	720 U	9,100 U	NR	
1,4-Dichlorobenzene	570,000	10,000,000	100,000	3,900 U	1,800 U	19,000 U	NR	710 U	720 U	9,100 U	NR	
1,2-Dichlorobenzene	5,100,000	10,000,000	50,000	3,900 U	1,800 U	19,000 U	NR	710 U	720 U	9,100 U	NR	
bis(2-chloroisopropyl)ether	2,300,000	10,000,000	10,000	3,900 U	1,800 U	19,000 U	NR	710 U	720 U	9,100 U	NR	
N-Nitroso-di-n-propylamine	660	660	10,000	390 U	180 U	1,900 U	NR	710 U	720 U	9,100 U	NR	
Hexachloroethane	6,000	100,000	100,000	390 U	180 U	1,900 U	NR	71 U	72 U	910 U	NR	
Nitrobenzene	28,000	520,000	10,000	390 U	180 U	1,900 U	NR	71 U	72 U	910 U	NR	
Isophorone	1,100,000	10,000,000	50,000	3,900 U	1,800 U	19,000 U	NR	710 U	720 U	9,100 U	NR	
bis(2-Chloroethoxy)methane	NS	NS	NS	3,900 U	1,800 U	19,000 U	NR	710 U	720 U	9,100 U	NR	
1,2,4-Trichlorobenzene	68,000	1,200,000	100,000	390 U	180 U	1,900 U	NR	710 U	720 U	9,100 U	NR	
Naphthalene	230,000	4,200,000	100,000	620 J	1,800 U	19,000 U	NR	710 U	72 U	910 U	NR	
Hexachlorobutadiene	1,000	21,000	100,000	780 U	360 U	3,800 U	NR	140 U	140 U	1,800 U	NR	
Hexachlorocyclopentadiene	400,000	7,300,000	100,000	3,900 U	1,800 U	19,000 U	NR	710 U	720 U	9,100 U	NR	
2-Chloronaphthalene	NS	NS	NS	3,900 U	1,800 U	19,000 U	NR	710 U	720 U	9,100 U	NR	
Dimethylphthalate	10,000,000	10,000,000	50,000	3,900 U	1,800 U	19,000 U	NR	710 U	720 U	9,100 U	NR	
Acenaphthylene	NS	NS	NS	3,900 U	1,800 U	19,000 U	NR	710 U	720 U	9,100 U	NR	
(1) 2,6-Dinitrotoluene	1,000	4,000	10,000	780 U	360 U	3,800 U	NR	710 U	33 J	9,100 U	NR	
(1) Acenaphthene	3,400,000	10,000,000	100,000	3,900 U	1,800 U	19,000 U	NR	140 U	140 U	1,800 U	NR	
2,4-Dinitrotoluene	1,000	4,000	10,000	780 U	360 U	3,800 U	NR	710 U	14 J	190 J	NR	
Diethylphthalate	10,000,000	10,000,000	50,000	3,900 U	1,800 U	19,000 U	NR	140 U	140 U	1,800 U	NR	
4-Chlorophenyl-phenylether	NS	NS	NS	3,900 U	1,800 U	19,000 U	NR	710 U	320 J	9,100 U	NR	
Fluorene	2,300,000	10,000,000	100,000	3,900 U	1,800 U	19,000 U	NR	710 U	720 U	9,100 U	NR	
N-Nitrosodiphenylamine	140,000	600,000	100,000	3,900 U	1,800 U	19,000 U	NR	710 U	720 U	9,100 U	NR	
4-Bromophenyl-phenylether	NS	NS	NS	3,900 U	1,800 U	19,000 U	NR	710 U	720 U	9,100 U	NR	
Hexachlorobenzene	660	2,000	100,000	390 U	180 U	1,900 U	NR	71 U	72 U	910 U	NR	
Phenanthrene	NS	NS	NS	540 J	1,800 U	19,000 U	NR	28 J	140 J	4,700 J	NR	
Anthracene	10,000,000	10,000,000	100,000	3,900 U	1,800 U	19,000 U	NR	20 J	54 J	850 J	NR	
Di-n-butylphthalate	5,700,000	10,000,000	100,000	3,900 U	1,800 U	19,000 U	NR	710 U	720 U	9,100 U	NR	
Fluoranthene	2,300,000	10,000,000	100,000	420 J	96 J	19,000 U	NR	33 J	250 J	7,400 J	NR	
Pyrene	1,700,000	10,000,000	100,000	410 J	91 J	19,000 U	NR	67 J	290 J	6,500 J	NR	
Benzidine	NS	NS	NS	16,000 U	7,100 U	76,000 U	NR	2,800 U	2,900 U	36,000 U	NR	
Butylbenzylphthalate	1,100,000	10,000,000	100,000	3,900 U	1,800 U	19,000 U	NR	710 U	720 U	9,100 U	NR	
3,3'-Dichlorobenzidine	2,000	6,000	100,000	7,800 U	3,600 U	38,000 U	NR	1,400 U	1,400 U	18,000 U	NR	
Benzo(a)anthracene	900	4,000	500,000	170 J	69 J	840 J	NR	38 J	270 J	3,300 J	NR	
Chrysene	9,000	40,000	500,000	190 J	64 J	19,000 U	NR	37 J	170 J	3,800 J	NR	
bis(2-Ethylhexyl)phthalate	49,000	210,000	100,000	46,000	26,000	140,000	NR	11,000	11,000	2,200 J	NR	
Di-n-octylphthalate	1,100,000	10,000,000	100,000	3,900 U	1,800 U	19,000 U	NR	710 U	720 U	9,100 U	NR	
Benz(o)fluoranthene	900	4,000	50,000	220 J	160 J	610 J	NR	100	330	3,400	NR	
Benz(k)fluoranthene	900	4,000	500,000	110 J	56 J	1,900 U	NR	39 J	120	1,500	NR	
Benz(a)pyrene	660	660	100,000	110 J	110 J	490 J	NR	60 J	230	2,800	NR	
Indeno(1,2,3-cd)pyrene	900	4,000	500,000	390 U	96 J	1,900 U	NR	54 J	110	1,500	NR	
Dibenz(a,h)anthracene	660	660	100,000	390 U	180 U	1,900 U	NR	71 U	42 J	400 J	NR	
Benz(g,h,i)perylene	NS	NS	NS	3,900 U	130 J	19,000 U	NR	68 J	110 J	1,600 J	NR	
Total Confident Conc. BNAs (s)				48,790	26,872	141,940		11,544	14,290	40,620		
Total Estimated Conc. BNA TICs (s)				925,700	0	1,519,000		20,390	32,130	1,090,000		

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

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The concentration given is an approximate value.

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HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (ug/kg)	H-17_6-12 142594 SOIL	H-18_6-12 142595 SOIL	H-19_6-12 142596 SOIL	H-19.1 168766 SOIL	H-21 168767 SOIL	H-22 168768 SOIL	H-24 168769 SOIL	H-25 168770 SOIL 10.0 ug/Kg	
SEMIVOLATILE COMPOUNDS (GC/MS)												
N-Nitrosodimethylamine	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
bis(2-Chloroethyl)ether	660	3,000	10,000	NR	NR	NR	NR	NR	NR	NR	NR	410 U
1,3-Dichlorobenzene	5,100,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
1,4-Dichlorobenzene	570,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
1,2-Dichlorobenzene	5,100,000	10,000,000	50,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
bis(2-chloroisopropyl)ether	2,300,000	10,000,000	10,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
N-Nitroso-di-n-propylamine	660	660	10,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
Hexachloroethane	6,000	100,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	410 U
Nitrobenzene	28,000	520,000	10,000	NR	NR	NR	NR	NR	NR	NR	NR	410 U
Isophorone	1,100,000	10,000,000	50,000	NR	NR	NR	NR	NR	NR	NR	NR	410 U
bis(2-Chloroethoxy)methane	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	820 J
1,2,4-Trichlorobenzene	68,000	1,200,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
Naphthalene	230,000	4,200,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	410 U
Hexachlorobutadiene	1,000	21,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	2,100 U
Hexachlorocyclopentadiene	400,000	7,300,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	820 U
2-Chloronaphthalene	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
Dimethylphthalate	10,000,000	10,000,000	50,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
Acenaphthylene	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
(1) 2,6-Dinitrotoluene	1,000	4,000	10,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
(1) Acenaphthene	3,400,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	820 U
(1) 2,4-Dinitrotoluene	1,000	4,000	10,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
Diethylphthalate	10,000,000	10,000,000	50,000	NR	NR	NR	NR	NR	NR	NR	NR	820 U
4-Chlorophenyl-phenylether	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	1,200 J
Fluorene	2,300,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
N-Nitrosodiphenylamine	140,000	600,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
4-Bromophenyl-phenylether	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
Hexachlorobenzene	660	2,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	410 U
Phenanthrene	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	410 U
Anthracene	10,000,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
Di-n-butylphthalate	5,700,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
Fluoranthene	2,300,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
Pyrene	1,700,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
Benzidine	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	16,000 U
Butylbenzylphthalate	1,100,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
3,3'-Dichlorobenzidine	2,000	6,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	8,200 U
Benz(a)anthracene	900	4,000	500,000	NR	NR	NR	NR	NR	NR	NR	NR	410 U
Chrysene	9,000	40,000	500,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
bis(2-Ethylhexyl)phthalate	49,000	210,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	57,000
Di-n-octylphthalate	1,100,000	10,000,000	100,000	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
Benz(o)fluoranthene	900	4,000	50,000	NR	NR	NR	NR	NR	NR	NR	NR	410 U
Benz(k)fluoranthene	900	4,000	500,000	NR	NR	NR	NR	NR	NR	NR	NR	410 U
Benz(a)pyrene	660	660	100,000	NR	NR	NR	NR	NR	NR	NR	NR	410 U
Indeno(1,2,3-cd)pyrene	900	4,000	500,000	NR	NR	NR	NR	NR	NR	NR	NR	410 U
Dibenz(a,h)anthracene	660	660	100,000	NR	NR	NR	NR	NR	NR	NR	NR	410 U
Benz(g,h,i)perylene	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	4,100 U
Total Confident Conc. BNAs (s)												61,120
Total Estimated Conc. BNA TICs (s)												294,400

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

- (1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.
- (2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.

Qualifiers:

- U - The compound was not detected at the indicated concentration.
- J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero.
- The concentration given is an approximate value.
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- NS - No standard has been developed by the Department.
- NR - Not analyzed.

TABLE 6
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HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (ug/kg)	H-26 168771 11/11/99 SOIL 1.0 ug/Kg	H-27_1 168772 11/11/99 SOIL	H-27_2 168773 11/11/99 SOIL 1.0 ug/Kg	H-28_1 168774 11/11/99 SOIL 1.0 ug/Kg	H-28_2 168775 11/11/99 SOIL	H-29 168776 11/11/99 SOIL 1.0 ug/Kg	H-30 168777 11/11/99 SOIL 2.0 ug/Kg	H-31 168776 11/11/99 SOIL	
SEMIVOLATILE COMPOUNDS (GC/MS)												
N-Nitrosodimethylamine	NS	NS	NS	360 U	NR	350 U	380 U	NR	350 U	1,800 U	1,800 U	NR
bis(2-Chloroethyl)ether	660	3,000	10,000	36 U	NR	35 U	38 U	NR	35 U	180 U	180 U	NR
1,3-Dichlorobenzene	5,100,000	10,000,000	100,000	360 U	NR	350 U	380 U	NR	350 U	1,800 U	1,800 U	NR
1,4-Dichlorobenzene	570,000	10,000,000	100,000	360 U	NR	350 U	380 U	NR	350 U	1,800 U	1,800 U	NR
1,2-Dichlorobenzene	5,100,000	10,000,000	50,000	17 J	NR	16 J	19 J	NR	350 U	1,800 U	1,800 U	NR
bis(2-chloroisopropyl)ether	2,300,000	10,000,000	10,000	360 U	NR	350 U	380 U	NR	350 U	1,800 U	1,800 U	NR
N-Nitroso-di-n-propylamine	660	660	10,000	36 U	NR	35 U	38 U	NR	35 U	180 U	180 U	NR
Hexachloroethane	6,000	100,000	100,000	36 U	NR	35 U	38 U	NR	35 U	180 U	180 U	NR
Nitrobenzene	28,000	520,000	10,000	36 U	NR	35 U	38 U	NR	35 U	180 U	180 U	NR
Isophorone	1,100,000	10,000,000	50,000	360 U	NR	350 U	380 U	NR	350 U	1,800 U	1,800 U	NR
bis(2-Chloroethoxy)methane	NS	NS	NS	360 U	NR	350 U	380 U	NR	350 U	1,800 U	1,800 U	NR
1,2,4-Trichlorobenzene	68,000	1,200,000	100,000	36 U	NR	35 U	38 U	NR	35 U	180 U	180 U	NR
Naphthalene	230,000	4,200,000	100,000	56 J	NR	12 J	20 J	NR	7.9 J	53 J	NR	
Hexachlorobutadiene	1,000	21,000	100,000	73 U	NR	71 U	77 U	NR	71 U	360 U	360 U	NR
Hexachlorocyclopentadiene	400,000	7,300,000	100,000	360 U	NR	350 U	380 U	NR	350 U	1,800 U	1,800 U	NR
2-Chloronaphthalene	NS	NS	NS	360 U	NR	350 U	380 U	NR	350 U	1,800 U	1,800 U	NR
Dimethylphthalate	10,000,000	10,000,000	50,000	360 U	NR	350 U	380 U	NR	350 U	1,800 U	1,800 U	NR
Acenaphthylene	NS	NS	NS	130 J	NR	44 J	62 J	NR	20 J	1,800 U	1,800 U	NR
(1) 2,6-Dinitrotoluene	1,000	4,000	10,000	73 U	NR	71 U	77 U	NR	71 U	360 U	360 U	NR
(1) Acenaphthene	3,400,000	10,000,000	100,000	38 J	NR	18 J	21 J	NR	11 J	40 J	NR	
2,4-Dinitrotoluene	1,000	4,000	10,000	73 U	NR	71 U	77 U	NR	71 U	360 U	360 U	NR
Diethylphthalate	10,000,000	10,000,000	50,000	360 U	NR	350 U	380 U	NR	350 U	1,800 U	1,800 U	NR
4-Chlorophenyl-phenylether	NS	NS	NS	360 U	NR	350 U	380 U	NR	350 U	1,800 U	1,800 U	NR
Fluorene	2,300,000	10,000,000	100,000	55 J	NR	41 J	25 J	NR	12 J	1,800 U	1,800 U	NR
N-Nitrosodiphenylamine	140,000	600,000	100,000	360 U	NR	350 U	380 U	NR	350 U	1,800 U	1,800 U	NR
4-Bromophenyl-phenylether	NS	NS	NS	360 U	NR	350 U	380 U	NR	350 U	1,800 U	1,800 U	NR
Hexachlorobenzene	660	2,000	100,000	36 U	NR	35 U	38 U	NR	35 U	180 U	180 U	NR
Phenanthrene	NS	NS	NS	710 U	NR	120 J	270 J	NR	75 J	300 J	J	NR
Anthracene	10,000,000	10,000,000	100,000	240 J	NR	36 J	77 J	NR	24 J	87 J	J	NR
Di-n-butylphthalate	5,700,000	10,000,000	100,000	360 U	NR	350 U	380 U	NR	350 U	1,800 U	1,800 U	NR
Fluoranthene	2,300,000	10,000,000	100,000	970	NR	180 J	510	NR	110 J	530 J	J	NR
Pyrene	1,700,000	10,000,000	100,000	2,700	NR	230 J	680 J	NR	190 J	1,200 J	J	NR
Benzidine	NS	NS	NS	1,400 U	NR	1,400 U	1,500 U	NR	1,400 U	7,200 U	7,200 U	NR
Butylbenzylphthalate	1,100,000	10,000,000	100,000	360 U	NR	350 U	38 J	NR	350 U	1,800 U	1,800 U	NR
3,3-Dichlorobenzidine	2,000	6,000	100,000	730 U	NR	710 U	770 U	NR	710 U	3,600 U	3,600 U	NR
Benzo(a)anthracene	900	4,000	500,000	760	NR	110 J	360	NR	59	330 J	J	NR
Chrysene	9,000	40,000	500,000	870	NR	110 J	340 J	NR	62 J	540 J	J	NR
bis(2-Ethylhexyl)phthalate	49,000	210,000	100,000	700	NR	1,900	7,800	NR	1,500	2,300	J	NR
Di-n-octylphthalate	1,100,000	10,000,000	100,000	360 U	NR	350 U	860	NR	350 U	1,800 U	1,800 U	NR
Benzo(b)fluoranthene	900	4,000	50,000	1,600	NR	270	800	NR	170	700	J	NR
Benzo(k)fluoranthene	900	4,000	500,000	750	NR	73	230	NR	80	290	J	NR
Benzo(a)pyrene	660	660	100,000	960	NR	120	450	NR	89	670	J	NR
Indeno(1,2,3-cd)pyrene	900	4,000	500,000	520	NR	39	210	NR	64	180 U	J	NR
Dibenz(a,h)anthracene	660	660	100,000	36 U	NR	35 U	38 U	NR	35 U	180 U	180 U	NR
Benzo(g,h,i)perylene	NS	NS	NS	490	NR	52 J	170 J	NR	63 J	1,800 U	1,800 U	NR
Total Confident Conc. BNAs (s)				11,566		3,371	12,982		2,537	7,040		
Total Estimated Conc. BNA TICs (s)				18,570		88,000	62,710		11,430	148,800		

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

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HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (ug/kg)	H-32 168779 11/11/99 SOIL	H-33 168780 11/11/99 SOIL	H-34 168781 11/11/99 SOIL	H-35 168782 11/11/99 SOIL	H-36 179234 1/13/00 SOIL 2.0 ug/Kg	H-37 179235 1/13/00 SOIL 1.0 ug/Kg	H-38 179236 1/13/00 SOIL 1.0 ug/Kg	H-39 179237 1/13/00 SOIL 1.0 ug/Kg
SEMIVOLATILE COMPOUNDS (GC/MS)											
	NS	NS	NS	NR	NR	NR	NR	800 U	NR	NR	NR
	bis(2-Chloroethyl)ether 660	3,000	10,000	NR	NR	NR	NR	80 U	NR	NR	NR
	1,3-Dichlorobenzene 5,100,000	10,000,000	100,000	NR	NR	NR	NR	800 U	NR	NR	NR
	1,4-Dichlorobenzene 570,000	10,000,000	100,000	NR	NR	NR	NR	800 U	NR	NR	NR
	1,2-Dichlorobenzene 5,100,000	10,000,000	50,000	NR	NR	NR	NR	800 U	NR	NR	NR
	bis(2-chloroisopropyl)ether 2,300,000	10,000,000	10,000	NR	NR	NR	NR	800 U	NR	NR	NR
	N-Nitroso-di-n-propylamine 660	660	10,000	NR	NR	NR	NR	80 U	NR	NR	NR
	Hexachloroethane 6,000	100,000	100,000	NR	NR	NR	NR	80 U	NR	NR	NR
	Nitrobenzene 28,000	520,000	10,000	NR	NR	NR	NR	800 U	NR	NR	NR
	Isophorone 1,100,000	10,000,000	50,000	NR	NR	NR	NR	800 U	NR	NR	NR
	bis(2-Chloroethoxy)methane NS	NS	NS	NR	NR	NR	NR	800 U	NR	NR	NR
	1,2,4-Trichlorobenzene 68,000	1,200,000	100,000	NR	NR	NR	NR	800 U	NR	NR	NR
	Naphthalene 230,000	4,200,000	100,000	NR	NR	NR	NR	800 U	420 U	420 U	410 U
	Hexachlorobutadiene 1,000	21,000	100,000	NR	NR	NR	NR	160 U	NR	NR	NR
	Hexachlorocyclopentadiene 400,000	7,300,000	100,000	NR	NR	NR	NR	800 U	NR	NR	NR
	2-Chloronaphthalene NS	NS	NS	NR	NR	NR	NR	800 U	NR	NR	NR
	Dimethylphthalate 10,000,000	10,000,000	50,000	NR	NR	NR	NR	800 U	NR	NR	NR
(1)	Acenaphthylene NS	NS	NS	NR	NR	NR	NR	800 U	NR	NR	NR
(1)	Acenaphthene 3,400,000	10,000,000	100,000	NR	NR	NR	NR	160 U	NR	NR	NR
	2,4-Dinitrotoluene 1,000	4,000	10,000	NR	NR	NR	NR	800 U	420 U	420 U	410 U
	Diethylphthalate 10,000,000	10,000,000	50,000	NR	NR	NR	NR	160 U	NR	NR	NR
	4-Chlorophenyl-phenylether NS	NS	NS	NR	NR	NR	NR	800 U	NR	NR	NR
	Fluorene 2,300,000	10,000,000	100,000	NR	NR	NR	NR	800 U	420 U	420 U	410 U
	N-Nitrosodiphenylamine 140,000	600,000	100,000	NR	NR	NR	NR	800 U	NR	NR	NR
	4-Bromophenyl-phenylether NS	NS	NS	NR	NR	NR	NR	800 U	NR	NR	NR
	Hexachlorobenzene 660	2,000	100,000	NR	NR	NR	NR	80 U	NR	NR	NR
	Phenanthrene NS	NS	NS	NR	NR	NR	NR	800 U	420 U	420 U	410 U
	Anthracene 10,000,000	10,000,000	100,000	NR	NR	NR	NR	800 U	420 U	420 U	410 U
	Di-n-butylphthalate 5,700,000	10,000,000	100,000	NR	NR	NR	NR	800 U	NR	NR	NR
	Fluoranthene 2,300,000	10,000,000	100,000	NR	NR	NR	NR	800 U	420 U	420 U	410 U
	Pyrene 1,700,000	10,000,000	100,000	NR	NR	NR	NR	800 U	420 U	420 U	410 U
	Benzidine NS	NS	NS	NR	NR	NR	NR	3,200 U	NR	NR	NR
	Butylbenzylphthalate 1,100,000	10,000,000	100,000	NR	NR	NR	NR	800 U	NR	NR	NR
	3,3'-Dichlorobenzidine 2,000	6,000	100,000	NR	NR	NR	NR	1,600 U	NR	NR	NR
	Benz(a)anthracene 900	4,000	500,000	NR	NR	NR	NR	80 U	42 U	42 U	41 U
	Chrysene 9,000	40,000	500,000	NR	NR	NR	NR	800 U	420 U	420 U	410 U
	bis(2-Ethylhexyl)phthalate 49,000	210,000	100,000	NR	NR	NR	NR	7,200	NR	NR	NR
	Di-n-octylphthalate 1,100,000	10,000,000	100,000	NR	NR	NR	NR	800 U	NR	NR	NR
	Benz(b)fluoranthene 900	4,000	50,000	NR	NR	NR	NR	80 U	42 U	42 U	41 U
	Benz(k)fluoranthene 900	4,000	500,000	NR	NR	NR	NR	80 U	42 U	42 U	41 U
	Benz(a)pyrene 660	660	100,000	NR	NR	NR	NR	80 U	42 U	42 U	41 U
	Indeno(1,2,3-cd)pyrene 900	4,000	500,000	NR	NR	NR	NR	80 U	42 U	42 U	41 U
	Dibenz(a,h)anthracene 660	660	100,000	NR	NR	NR	NR	80 U	42 U	42 U	41 U
	Benz(g,h,i)perylene NS	NS	NS	NR	NR	NR	NR	800 U	420 U	420 U	410 U
Total Confident Conc. BNAs (s)								7,200	0	0	0
Total Estimated Conc. BNA TICs (s)								840			

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichlorobenzene.

(2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.

Qualifiers:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero.

The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

NS - No standard has been developed by the Department.

NR - Not analyzed.

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (ug/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (ug/kg)	H-40 179238 1/13/00 SOIL 1.0 ug/Kg	B-1_0-4 327169 01/15/02 SOLID 1.0 ug/Kg	B-2_0-4 327170 01/15/02 SOLID 1.0 ug/Kg	B-3_0-4 327171 01/15/02 SOLID 1.0 ug/Kg	B-1_4-8 327172 01/15/02 SOLID 1.0 ug/Kg	B-4_24-26 327173 01/15/02 SOLID	B-4_33-35 327174 01/15/02 SOLID	
SEMITOLATILE COMPOUNDS (GC/MS)											
	NS	NS	NS	NR	390 U	380 U	390 U	410 U	NR	NR	NR
	660	3,000	10,000	NR	39 U	38 U	39 U	41 U	NR	NR	NR
	5,100,000	10,000,000	100,000	NR	390 U	380 U	390 U	410 U	NR	NR	NR
	570,000	10,000,000	100,000	NR	390 U	380 U	390 U	410 U	NR	NR	NR
	5,100,000	10,000,000	50,000	NR	390 U	380 U	390 U	410 U	NR	NR	NR
	2,300,000	10,000,000	10,000	NR	390 U	380 U	390 U	410 U	NR	NR	NR
	660	660	10,000	NR	39 U	38 U	39 U	41 U	NR	NR	NR
	6,000	100,000	100,000	NR	39 U	38 U	39 U	41 U	NR	NR	NR
	28,000	520,000	10,000	NR	39 U	38 U	39 U	41 U	NR	NR	NR
	1,100,000	10,000,000	50,000	NR	390 U	380 U	390 U	410 U	NR	NR	NR
	NS	NS	NS	NR	390 U	380 U	390 U	410 U	NR	NR	NR
	68,000	1,200,000	100,000	NR	39 U	38 U	39 U	41 U	NR	NR	NR
	230,000	4,200,000	100,000	400 U	100 J	380 U	390 U	41 J	NR	NR	NR
	1,000	21,000	100,000	NR	78 U	76 U	78 U	81 U	NR	NR	NR
	400,000	7,300,000	100,000	NR	390 U	380 U	390 U	410 U	NR	NR	NR
	NS	NS	NS	NR	17 J	380 U	390 U	410 U	NR	NR	NR
(1)	10,000,000	10,000,000	50,000	NR	390 U	380 U	390 U	410 U	NR	NR	NR
	NS	NS	NS	400 U	390 U	380 U	390 U	410 U	NR	NR	NR
(1)	2,6-Dinitrotoluene	1,000	4,000	10,000	NR	78 U	76 U	78 U	81 U	NR	NR
(1)	3,400,000	10,000,000	100,000	400 U	390 U	380 U	390 U	410 U	NR	NR	NR
	1,000	4,000	10,000	NR	78 U	76 U	78 U	81 U	NR	NR	NR
	10,000,000	10,000,000	50,000	NR	390 U	380 U	390 U	410 U	NR	NR	NR
	NS	NS	NS	NR	390 U	380 U	390 U	410 U	NR	NR	NR
	2,300,000	10,000,000	100,000	400 U	390 U	380 U	390 U	410 U	NR	NR	NR
	140,000	600,000	100,000	NR	390 U	380 U	390 U	410 U	NR	NR	NR
	NS	NS	NS	NR	390 U	380 U	390 U	410 U	NR	NR	NR
	660	2,000	100,000	NR	39 U	38 U	39 U	41 U	NR	NR	NR
	NS	NS	NS	NR	400 U	21 J	9.3 J	230 J	12 J	NR	NR
	10,000,000	10,000,000	100,000	400 U	390 U	380 U	390 U	410 U	NR	NR	NR
	5,700,000	10,000,000	100,000	NR	390 U	380 U	390 U	410 U	NR	NR	NR
	2,300,000	10,000,000	100,000	400 U	35 J	19 J	30 J	11 J	NR	NR	NR
	1,700,000	10,000,000	100,000	400 U	39 J	29 J	270 J	16 J	NR	NR	NR
	NS	NS	NS	NR	1600 U	1500 U	1600 U	1600 U	NR	NR	NR
	1,100,000	10,000,000	100,000	NR	390 U	380 U	390 U	410 U	NR	NR	NR
	2,000	6,000	100,000	NR	780 U	760 U	780 U	810 U	NR	NR	NR
	900	4,000	500,000	40 U	24 J	38 U	120	41 U	NR	NR	NR
	9,000	40,000	500,000	400 U	17 J	11 J	130 J	410 U	NR	NR	NR
	49,000	210,000	100,000	NR	4600	1000	190 J	3400	NR	NR	NR
	1,100,000	10,000,000	100,000	NR	390 U	380 U	390 U	410 U	NR	NR	NR
	900	4,000	50,000	40 U	36 J	21 J	160	41 U	NR	NR	NR
	900	4,000	500,000	40 U	20 J	8.6 J	58	41 U	NR	NR	NR
	660	.660	100,000	40 U	30 J	18 J	110	41 U	NR	NR	NR
	900	4,000	500,000	40 U	39 U	38 U	47	41 U	NR	NR	NR
	660	660	100,000	40 U	39 U	38 U	10 J	41 U	NR	NR	NR
	NS	NS	NS	400 U	390 U	8.5 J	42 J	410 U	NR	NR	NR
Total Confident Conc. BNAs (s)				0	4600	1000	495	3400			
Total Estimated Conc. BNA TICs (s)					32380	1030	1070	7650			

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

(1) Values listed reflect the combined standards for the cis and trans isomers of 1,3-Dichloropropene.

(2) The Action Levels listed reflect current STL Edison knowledge of the standards and are intended as general guidance for the user. Please consult appropriate regulations and cleanup standards for your specific application.

Qualifiers:

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The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

NS - No standard has been developed by the Department.

NR - Not analyzed.

TABLE 6
 SUMMARY OF SOIL ANALYTICAL DATA:
 HISTORICAL DATA
 ELCO SOLVENTS
 CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (mg/kg)	#1_UST_AREA 2226-001 5/4/98 SOIL 1 mg/Kg	#2_LOADING_BAY 2226-002 5/4/98 SOIL 2 mg/Kg	#3_LOADING_BAY 2226-003 5/4/98 SOIL 1 mg/Kg	#4_LOADING_BAY 2226-004 5/4/98 SOIL 1 mg/Kg	#6_DISCHARGE_AREA#7_DISCHARGE_AREA 2226-006 5/4/98 SOIL 1 mg/Kg	#8_TRUCK_PAD 2226-007 .5/4/98 SOIL 1 mg/Kg	
TOTAL PETROLEUM HYDROCARBONS (418.1) Total Petroleum Hydrocarbons	NS	NS	NS	206	802	106	40.5	35.1	90.2	161

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

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HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Impact to Ground Water Soil Criteria (mg/kg)	#9_MIXING_AREA 2226-009 5/4/98 SOIL 1 mg/Kg	#10_MIXING_AREA 2226-010 5/4/98 SOIL 1 mg/Kg	#11_MIXING_AREA 2226-015 5/4/98 SOIL 1 mg/Kg	#12_RR_CAR 2226-011 5/4/98 SOIL 1 mg/Kg	#13_DISCHARGE_AREA 2226-012 5/4/98 SOIL 1 mg/Kg	#14_TRUCK_PAD 2226-013 5/4/98 SOIL 1 mg/Kg	PE-1_6.2-6.7 142569 7/8/99 SOIL 12.5 mg/Kg	
TOTAL PETROLEUM HYDROCARBONS (418.1) Total Petroleum Hydrocarbons	NS	NS	NS	203	426	40.8	8.34	40.2	7.41	8,270	

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SUMMARY OF SOIL ANALYTICAL DATA;
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ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Impact to Ground Water Criteria (mg/kg)	PE-2_6.2-6.7 142570 7/8/99 SOIL 5.0 mg/Kg	PE-3_5.2-5.7 142571 7/8/99 SOIL 5.0 mg/Kg	PE-4_6.2-6.7 142572 7/8/99 SOIL 1.0 mg/Kg	PE-5_5.5-6.0 142573 7/8/99 SOIL 5.0 mg/Kg	PE-6_6.2-6.7 142574 7/8/99 SOIL 5.0 mg/Kg	SP-1 142575 7/8/99 SOIL 1.0 mg/Kg	SP-2 142576 7/8/99 SOIL 1.0 mg/Kg	SP-3 142577 7/8/99 SOIL 1.0 mg/Kg	
TOTAL PETROLEUM HYDROCARBONS (418.1) Total Petroleum Hydrocarbons	NS	NS	NS	4,040	1,950	26.8	1,780	2,880	206	188	185	

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TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (mg/kg)	H-1 142578 7/8/99 SOIL	H-2_0-6 142579 7/8/99 SOIL	H-3_18-24 142580 7/8/99 SOIL	H-4_18-24 142581 7/8/99 SOIL	H-5_0-6 142582 7/8/99 SOIL	H-6_0-6 142583 7/8/99 SOIL	H-7_1.5-2.0 142584 7/8/99 SOIL	H-8_5-5.5 142585 7/8/99 SOIL
TOTAL PETROLEUM HYDROCARBONS (418.1) Total Petroleum Hydrocarbons	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR

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CARLSTADT, NJ

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TOTAL PETROLEUM HYDROCARBONS (418.1) Total Petroleum Hydrocarbons	NS	NS	NS	281	NR	NR	NR	2,090	2,660	10,000	NR

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TOTAL PETROLEUM HYDROCARBONS (418.1) Total Petroleum Hydrocarbons	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR

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TOTAL PETROLEUM HYDROCARBONS (418.1) Total Petroleum Hydrocarbons	NS	NS	NS	NR	NR	3,640	NR	NR	NR	NR	NR	NR

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

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 CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	New Jersey Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (mg/kg)	H-32 168779 11/11/99 SOIL	H-33 168780 11/11/99 SOIL	H-34 168781 11/11/99 SOIL	H-35 168782 11/11/99 SOIL	H-36 179234 1/13/00 SOIL	H-37 179235 1/13/00 SOIL	H-38 179236 1/13/00 SOIL	H-39 179237 1/13/00 SOIL
TOTAL PETROLEUM HYDROCARBONS (418.1) Total Petroleum Hydrocarbons	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

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TOTAL PETROLEUM HYDROCARBONS (418.1) Total Petroleum Hydrocarbons	NS	NS	NS	NR	NR	NR	NR	NR	NR	NR

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

Qualifiers:

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- J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.
- B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
- NS - No standard has been developed by the Department.
- NR - Not analyzed.

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Units	New Jersey Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (mg/kg)	#1_UST_AREA 2226-001 5/4/98 SOIL	#2_LOADING_BAY 2226-002 5/4/98 SOIL	#3_LOADING_BAY 2226-003 5/4/98 SOIL	#4_LOADING_BAY 2226-004 5/4/98 SOIL	#6_DISCHARGE_AREA 2226-006 5/4/98 SOIL	#7_DISCHARGE_AREA 2226-007 5/4/98 SOIL	#8_TRUCK_PAD 2226-008 5/4/98 SOIL
METALS ANALYSIS										
Antimony	14	340	NS	NR	NR	NR	NR	NR	NR	NR
Arsenic	20	20	NS	NR	NR	NR	NR	NR	NR	NR
Beryllium	2	2	NS	NR	NR	NR	NR	NR	NR	NR
Cadmium	39	100	NS	NR	NR	NR	NR	NR	NR	NR
Chromium	120,000	NS	NS	NR	NR	NR	NR	NR	NR	NR
Copper	600	600	NS	NR	NR	NR	NR	NR	NR	NR
Lead	400	600	NS	NR	NR	NR	NR	NR	NR	NR
Mercury	14	270	NS	NR	NR	NR	NR	NR	NR	NR
Nickel	250	2,400	NS	NR	NR	NR	NR	NR	NR	NR
Selenium	63	3,100	NS	NR	NR	NR	NR	NR	NR	NR
Silver	110	4,100	NS	NR	NR	NR	NR	NR	NR	NR
Thallium	2	2	NS	NR	NR	NR	NR	NR	NR	NR
Zinc	1,500	1,500	NS	NR	NR	NR	NR	NR	NR	NR

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

Qualifiers:

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- J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero.
- The concentration given is an approximate value.
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- NR - Not analyzed.

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number	New Jersey Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (mg/kg)	#9_MIXING_AREA 2226-009 5/4/98 SOIL	#10_MIXING_AREA 2226-010 5/4/98 SOIL	#11_MIXING_AREA 2226-015 5/4/98 SOIL	#12_RR_CAR 2226-011 5/4/98 SOIL	#13_DISCHARGE_AREA 2226-012 5/4/98 SOIL	#14_TRUCK_PAD 2226-013 5/4/98 SOIL	PE-1_6.2-6.7 142569 7/8/99 SOIL
METALS ANALYSIS										
Antimony	14	340	NS	NR	NR	NR	NR	NR	NR	NR
Arsenic	20	20	NS	NR	NR	NR	NR	NR	NR	NR
Beryllium	2	2	NS	NR	NR	NR	NR	NR	NR	NR
Cadmium	39	100	NS	NR	NR	NR	NR	NR	NR	NR
Chromium	120,000	NS	NS	NR	NR	NR	NR	NR	NR	NR
Copper	600	600	NS	NR	NR	NR	NR	NR	NR	NR
Lead	400	600	NS	NR	NR	NR	NR	NR	NR	NR
Mercury	14	270	NS	NR	NR	NR	NR	NR	NR	NR
Nickel	250	2,400	NS	NR	NR	NR	NR	NR	NR	NR
Selenium	63	3,100	NS	NR	NR	NR	NR	NR	NR	NR
Silver	110	4,100	NS	NR	NR	NR	NR	NR	NR	NR
Thallium	2	2	NS	NR	NR	NR	NR	NR	NR	NR
Zinc	1,500	1,500	NS	NR	NR	NR	NR	NR	NR	NR

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

Qualifiers:

U - The compound was not detected at the indicated concentration.

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The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

NS - No standard has been developed by the Department.

NR - Not analyzed.

TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Units	New Jersey Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (mg/kg)	PE-2_6.2-6.7 142570 7/8/99 SOIL	PE-3_5.2-5.7 142571 7/8/99 SOIL	PE-4_6.2-6.7 142572 7/8/99 SOIL	PE-5_5.5-6.0 142573 7/8/99 SOIL	PE-6_6.2-6.7 142574 7/8/99 SOIL	SP-1 142575 7/8/99 SOIL mg/Kg	SP-2 142576 7/8/99 SOIL mg/Kg	SP-3 142577 7/8/99 SOIL mg/Kg
METALS ANALYSIS											
Antimony	14	340	NS	NR	NR	NR	NR	NR	1.3 U	1.3 U	1.3 U
Arsenic	20	20	NS	NR	NR	NR	NR	NR	4.1	4.0	3.4
Beryllium	2	2	NS	NR	NR	NR	NR	NR	0.34 J	0.34 J	0.32 J
Cadmium	39	100	NS	NR	NR	NR	NR	NR	0.26 J	0.31 J	0.20 J
Chromium	120,000	NS	NS	NR	NR	NR	NR	NR	19.1	18.4	17.2
Copper	600	600	NS	NR	NR	NR	NR	NR	20.0	19.3	16.7
Lead	400	600	NS	NR	NR	NR	NR	NR	57.6	60.3	42.0
Mercury	14	270	NS	NR	NR	NR	NR	NR	0.71	0.65	0.73
Nickel	250	2,400	NS	NR	NR	NR	NR	NR	8.6 J	9.0	8.2 J
Selenium	63	3,100	NS	NR	NR	NR	NR	NR	0.96 U	0.93 U	0.93 U
Silver	110	4,100	NS	NR	NR	NR	NR	NR	0.32 U	0.31 U	0.31 U
Thallium	2	2	NS	NR	NR	NR	NR	NR	1.1 U	1.0 U	1.0 U
Zinc	1,500	1,500	NS	NR	NR	NR	NR	NR	36.7	40.2	41.7

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

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TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Units	New Jersey Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (mg/kg)	H-1 142578 SOIL	H-2_0-6 142579 SOIL	H-3_18-24 142580 SOIL	H-4_18-24 142581 SOIL	H-5_0-6 142582 SOIL	H-6_0-6 142583 SOIL	H-7_1.5-2.0 142584 SOIL	H-8_5-5.5 142585 SOIL
METALS ANALYSIS											
Antimony	14	340	NS	NR	NR	NR	NR	NR	NR	NR	NR
Arsenic	20	20	NS	NR	NR	NR	NR	NR	NR	NR	NR
Beryllium	2	2	NS	NR	NR	NR	NR	NR	NR	NR	NR
Cadmium	39	100	NS	NR	NR	NR	NR	NR	NR	NR	NR
Chromium	120,000	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR
Copper	600	600	NS	NR	NR	NR	NR	NR	NR	NR	NR
Lead	400	600	NS	NR	NR	NR	NR	NR	NR	NR	NR
Mercury	14	270	NS	NR	NR	NR	NR	NR	NR	NR	NR
Nickel	250	2,400	NS	NR	NR	NR	NR	NR	NR	NR	NR
Selenium	63	3,100	NS	NR	NR	NR	NR	NR	NR	NR	NR
Silver	110	4,100	NS	NR	NR	NR	NR	NR	NR	NR	NR
Thallium	2	2	NS	NR	NR	NR	NR	NR	NR	NR	NR
Zinc	1,500	1,500	NS	NR	NR	NR	NR	NR	NR	NR	NR

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

Qualifiers:

- U - The compound was not detected at the indicated concentration.
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TABLE 6
SUMMARY OF SOIL ANALYTICAL DATA:
HISTORICAL DATA
ELCO SOLVENTS
CARLSTADT, NJ

Sample ID Lab Sample Number Sampling Date Matrix Units	New Jersey Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (mg/kg)	New Jersey Impact to Ground Water Soil Cleanup Criteria (mg/kg)	H-9_18-24 142586 7/8/99 SOIL	H-10_0-6 142587 7/8/99 SOIL	H-11_0-6 142588 7/8/99 SOIL	H-12_6-12 142589 7/8/99 SOIL	H-13_6-12 142590 7/8/99 SOIL	H-14_6-12 142591 7/8/99 SOIL	H-15_6-12 142592 7/8/99 SOIL	H-16_6-12 142593 7/8/99 SOIL	
METALS ANALYSIS												
Antimony	14	340	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Arsenic	20	20	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Beryllium	2	2	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cadmium	39	100	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chromium	120,000	NS	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Copper	600	600	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lead	400	600	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury	14	270	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Nickel	250	2,400	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Selenium	63	3,100	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Silver	110	4,100	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Thallium	2	2	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR
Zinc	1,500	1,500	NS	NR	NR	NR	NR	NR	NR	NR	NR	NR

Notes: Concentrations in **BOLD** exceed minimum of New Jersey Soil Cleanup Criteria.

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- U - The compound was not detected at the indicated concentration.
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- The concentration given is an approximate value.
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- NR - Not analyzed.

APPENDIX E:

HRC Injection Grid Design Spreadsheet: Pilot Test & Entire Plume

	HRC Design Software for Plume Area/Grid Treatment		US Version 3.0
Regenesis Technical Support: USA (949) 366-8000, www.regenesis.com			
Site Name:	Location:	Consultant:	

Site Conceptual Model/Extent of Plume Requiring Remediation

Width of plume (intersecting gw flow direction)
Length of plume (parallel to gw flow direction)
Depth to contaminated zone
Thickness of contaminated saturated zone
Nominal aquifer soil (gravel sand, silty sand, silt, clay)
Total porosity
Hydraulic conductivity
Hydraulic gradient
Seepage velocity
Treatment Zone Pore Volume

25	ft	=	625	sq. ft.
25	ft	=	625	sq. ft.
0	ft			
10	ft			
silt				
0.35		Eff. porosity	0.01	
4.46	ft/day	=	1.6E-03	cm/sec
0.012	ft/ft			
1953.5	ft/yr	=	5.352	ft/day,
2,188	ft ³	=	16,365	gallons

Dissolved Phase Electron Donor Demand

Tetrachloroethene (PCE)
Trichloroethene (TCE)
cis-1,2-dichloroethene (DCE)
Vinyl Chloride (VC)
Carbon tetrachloride
Chloroform
1,1,1-Trichloroethane (TCA)
1,1-Dichlorochloroethane (DCA)
Hexavalent Chromium
User added, also add stoichiometric demand
User added, also add stoichiometric demand

Contaminant		
Conc (mg/L)	Mass (lb)	contam/H ₂
0.00	0.0	20.7
0.02	0.0	21.9
0.67	0.1	24.2
0.12	0.0	31.2
0.00	0.0	19.2
0.00	0.0	19.9
0.14	0.0	22.2
0.52	0.1	24.7
0.00	0.0	17.3
		0.0
		0.0

Sorbed Phase Electron Donor Demand

Soil bulk density
Fraction of organic carbon: foc

$$1.7 \text{ g/cm}^3 = 106 \text{ lb/cf}$$

range: 0.0001 to 0.01

(Values are estimated using Soil Conc=foc*Koc*Cgw)
(Adjust Koc as nec. to provide realistic estimates)
Tetrachloroethene (PCE)
Trichloroethene (TCE)
cis-1,2-dichloroethene (DCE)
Vinyl Chloride (VC)
Carbon tetrachloride
Chloroform
1,1,1-Trichloroethane (TCA)
1,1-Dichlorochloroethane (DCA)
User added, also add stoichiometric demand
User added, also add stoichiometric demand

Koc (L/kg)	Contaminant	Stoich. (wt/wt)
Conc (mg/kg)	Mass (lb)	contam/H ₂
363	0.00	20.7
107	0.01	21.9
80	0.27	24.2
2.5	0.00	31.2
110	0.00	19.2
34	0.00	19.9
183	0.13	22.2
153	0.48	24.7
0	0.00	0.0
0	0.00	0.0

Electron Acceptor		
Conc (mg/L)	Mass (lb)	elec acceptor/H ₂
3.33	0	8.0
0.05	0	12.4
3.95	1	27.5
663.00	93	55.9
18.00	2	12.0

Competing Electron Acceptors

Oxygen
Nitrate
Est. Mn reduction demand (potential amt of Mn²⁺ formed)
Est. Fe reduction demand (potential amt of Fe²⁺ formed)
Estimated sulfate reduction demand

3	Recommend 1-4x
2	Recommend 1-4x

Injection Point Spacing and Dose:

Injection spacing within rows (ft)
Injection spacing between rows (ft)
Advection travel time bet. rows (days)

6.3	# points per row:	4
6.3	# of rows:	4
1	Total # of points:	16
	Minimum req. HRC dose per foot (lb/ft)	2.0

<-Minimum Dose

Project Summary

Number of HRC delivery points (adjust as nec. for site) 16
HRC Dose in lb/foot (adjust as nec. for site) 2.0 <-Minimum Dose Override
Corresponding amount of HRC per point (lb) 20
Number of 30 lb HRC Buckets per injection point 0.7
Total Number of 30 lb Buckets 11
Total Amt of HRC (lb) 330
HRC Cost \$ 8.00
Total Material Cost \$ 2,640

Shipping and Tax Estimates in US Dollars

Sales Tax rate: 0% \$ -
Total Matl. Cost \$ 2,640
Shipping of HRC (call for amount) \$ -
Total Regenesis Material Cost \$ 2,640

HRC Installation Cost Est. (responsibility of customer to contract work)

Footage for each inj. point = uncontaminated + HRC inj. interval (ft)	10	Other Project Costs
Total length for direct push for project (ft)	160	Design and regulatory issues \$ 2,000
Estimated daily installation rate (ft per day: 500 for push, 200 for drilling)	400	Groundwater monitoring and rpt \$ 3,000
Estimated points per day (10 to 20 is typical for direct push)	40.0	Other \$ -
Required number of days 1		Other \$ -
Mob/demob cost for injection subcontractor \$ 1,000		Other \$ -
Daily rate for inj. Sub. (\$1-2K for push \$3-4K for drill rig) \$ 1,500		Other \$ -
Total injection subcontractor cost for application \$ 2,500		Other \$ -
Total Install Cost (not inc. consultant, lab, etc.) \$ 6,140		Total Project Cost \$ 10,140

HRC Design Software for Plume Area/Grid Treatment

US Version 3.0

Site Name:

Location:

Consultant:

Site Conceptual Model/Extent of Plume Requiring Remediation

Width of plume (intersecting gw flow direction)
 Length of plume (parallel to gw flow direction)
 Depth to contaminated zone
 Thickness of contaminated saturated zone
 Nominal aquifer soil (gravel, sand, silty sand, silt, clay)
 Total porosity
 Hydraulic conductivity
 Hydraulic gradient
 Seepage velocity
 Treatment Zone Pore Volume

100 ft	=	
62.5 ft		6,250 sq. ft.
0 ft		
10 ft		
silt		
0.35	Eff. porosity	0.01
2.4 ft/day	=	8.5E-04 cm/sec
0.012 ft/ft		
1051.2 ft/yr	=	2.880 ft/day,
21,875 ft ²	=	163,647 gallons

Dissolved Phase Electron Donor Demand

Tetrachloroethene (PCE)
 Trichloroethene (TCE)
 cis-1,2-dichloroethene (DCE) DNAPL? Consider inc. add. dem. factor
 Vinyl Chloride (VC)
 Carbon tetrachloride
 Chloroform
 1,1,1-Trichloroethane (TCA)
 1,1-Dichlorochloroethane (DCA)
 Hexavalent Chromium
 User added, also add stoichiometric demand
 User added, also add stoichiometric demand

Contaminant	Stoich. (wt/wt)
Conc (mg/L)	contam/H ₂
0.05	0.1
0.27	0.4
34.00	46.4
Vinyl Chloride (VC)	24.2
Carbon tetrachloride	31.2
Chloroform	19.2
1,1,1-Trichloroethane (TCA)	19.9
1,1-Dichlorochloroethane (DCA)	22.2
Hexavalent Chromium	24.7
User added, also add stoichiometric demand	17.3
User added, also add stoichiometric demand	0.0
0.00	0.0

Sorbed Phase Electron Donor Demand

Soil bulk density
 Fraction of organic carbon: foc

$$1.7 \text{ g/cm}^3 = 106 \text{ lb/cf}$$

range: 0.0001 to 0.01

(Values are estimated using Soil Conc=foc*Koc*Cgw)
 (Adjust Koc as nec. to provide realistic estimates)
 Tetrachloroethene (PCE)
 Trichloroethene (TCE)
 cis-1,2-dichloroethene (DCE)
 Vinyl Chloride (VC)
 Carbon tetrachloride
 Chloroform
 1,1,1-Trichloroethane (TCA)
 1,1-Dichlorochloroethane (DCA)
 User added, also add stoichiometric demand
 User added, also add stoichiometric demand

Koc (L/kg)	Contaminant	Stoich. (wt/wt)
263	0.05	0.4
107	0.14	1.0
80	13.60	90.2
2.5	0.04	0.3
110	0.02	0.2
34	0.01	0.0
183	0.74	4.8
183	14.64	97.1
0	0.00	0.0
0	0.00	0.0

Competing Electron Acceptors

Oxygen
 Nitrate
 Est. Mn reduction demand (potential amt of Mn²⁺ formed)
 Est. Fe reduction demand (potential amt of Fe²⁺ formed)
 Estimated sulfate reduction demand

Electron Acceptor	Stoich. (wt/wt)
Conc (mg/L)	elec acceptor/H ₂
1.46	2
0.05	0
9.62	13
469.00	640
2.50	3

Microbial Demand Factor
Safety Factor

3	Recommend 1-4x
2	Recommend 1-4x

Injection Point Spacing and Dose:

Injection spacing within rows (ft)
 Injection spacing between rows (ft)
 Advection travel time bet. rows (days)

7.5	# points per row:	14
7.5	# of rows:	9
3	Total # of points:	126
	Minimum req. HRC dose per foot (lb/ft)	4.0

Project Summary

Number of HRC delivery points (adjust as nec. for site)	126
HRC Dose in lb/foot (adjust as nec. for site)	4.0
Corresponding amount of HRC per point (lb)	40
Number of 30 lb HRC Buckets per injection point	1.3
Total Number of 30 lb Buckets	170
Total Amt of HRC (lb)	5,100
HRC Cost	\$ 6.00
Total Material Cost	\$ 30,600

Shipping and Tax Estimates in US Dollars

Sales Tax	rate: 0%	\$ -
Total Matl. Cost		\$ 30,600
Shipping of HRC (call for amount)		\$ -
Total Regenesis Material Cost		\$ 30,600

HRC Installation Cost Est. (responsibility of customer to contract work)

Footage for each inj. point = uncontaminated + HRC inj. interval (ft)	10
Total length for direct push for project (ft)	1,260
Estimated daily installation rate (ft per day: 500 for push, 200 for drilling)	400
Estimated points per day (10 to 20 is typical for direct push)	40.0
Required number of days	4
Mob/demob cost for injection subcontractor	\$ 1,000
Daily rate for inj. Sub. (\$1-2K for push \$3-4K for drill rig)	\$ 1,500
Total injection subcontractor cost for application	\$ 7,000
Total Install Cost (not inc. consultant, lab, etc.)	\$ 37,600

Other Project Costs

Design and regulatory issues	\$ -
Groundwater monitoring and rpt	\$ -
Other	\$ -
Total Project Cost	\$ 37,600

Addendum D

Marisol Inc.
125 Factory Lane
Middlesex, NJ 08846
EPA#NJD002454544

Northeast Environmental Service
Canal Road
Wampsville, NY 13163
EPA#NYD057770109

Freehold Cartage Inc.
P.O. Box 5010
Freehold, NJ 07728
EPA#NJD054126164